

HELMINTHOLOGICAL ABSTRACTS

incorporating

BIBLIOGRAPHY OF HELMINTHOLOGY

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HELMINTHOLOGICAL ABSTRACTS

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HELMINTHOLOGICAL ABSTRACTS

INCORPORATING BIBLIOGRAPHY OF HELMINTHOLOGY

FOR THE YEAR 1952

Vol. 21, Part 4

306—Acta Agronomica. Palmira.

- a. CARDEÑOSA B., R., 1952.—“Investigaciones sobre la ‘rayadilla’ del plátano (*Musa* sp.) en Colombia.” 2 (1), 1–21.

(306a) After a short introduction on the cultivation and economic importance of *Musa* spp. in Colombia and a history of the disease known as “rayadilla”, Cardeñosa describes in detail the symptoms which occur chiefly on the plantain variety Maqueño. They include dwarfing, chlorosis and reduction of the leaf laminae, which become brittle, the leaves becoming abnormally upright and giving the plant a rosette-like appearance. The fruiting stem is small and oblique or horizontal instead of pendulous; the ripening of the fruit is irregular. The root system is reduced by rotting, and the roots show swellings and superficial reddish necrotic areas. Dressings of 62.5 gm. and 125 gm. of saltpetre had no appreciable effect on diseased plants. Attempts to transmit a possible virus from the diseased plants were unsuccessful. Experiments with sterilized and non-sterilized soil indicated that the trouble was soil-borne. An examination of stained roots showed the presence of nematodes which were identified by Dr. G. Steiner as *Heterodera marioni* and *Tylenchus similis*. More work needs to be done to determine whether other conditions besides nematodes contribute to the causation of the disease.

M.T.F.

307—Acta Medica Philippina.

- a. GUEVARA, R., ESTRADA, H. R. & LEON, G. V. DE, 1952.—“Hetrazan on ascarigram. I.” 8 (3), 157–171.

(307a) From kymographic studies on the movements of whole *Ascaris lumbricoides* immersed in Bunge’s solution containing hetrazan it is concluded that hetrazan acts as a vermifuge not as a vermicide, and that its action is not modified by varying strengths of the solution. [The name “ascarigram” is coined for a kymogram produced by *Ascaris*.] R.T.L.

308—Acta Tropica. Basle.

- a. SCHOBINGER VON SCHOWINGEN, R., 1952.—“Further experiences in the treatment of filariasis with hetrazan.” 9 (3), 270–271.

(308a) Details are given of the therapeutic effects and allergic reactions when hetrazan was administered at the dosage of 2, 3, or 5 mg. per kg. body-weight thrice daily to Puerto Rican cases of filariasis bancrofti over periods ranging from 7 to 21 days. Although toxic manifestations appeared on the second day with the higher doses, they were not of sufficient intensity to require suspension of treatment and were of short duration. In three cases Pyribenzamine administered with the hetrazan caused a remarkable decrease in the allergic and toxic reactions.

R.T.L.

* Titles so marked throughout this number have not been seen in the original.

309—Acta Veterinaria. Budapest.

- a. KOTLÁN, A., 1952.—“Ergebnisse der I. ungarischen parasitologischen Inlandexpedition. (Vorläufige Mitteilung.)” 2 (4), 337–341. [Russian summary p. 341.]

(309a) Outbreaks of trichinelliasis, attributed to consumption of uncooked pork, have occurred from time to time in the Bakony Forest district of Hungary but in no case could rats be implicated as the source of infection for the pigs. In July 1952 an expedition was sent to this district with the primary object of discovering hosts of *Trichinella spiralis* which might be responsible for the spread of this parasite to pigs. Kotlán, who led the expedition, here presents his preliminary report. A total of 961 small mammals were examined for *Trichinella*: all were negative. The species (with the number examined in parentheses) were rodents: *Clethrionomys glareolus* (396), *Apodemus flavicollis* (239), *Microtus arvalis* (197), *Pitymys subterraneus* (35), *Rattus norvegicus* (2), *Citellus citellus* (7); insectivores: *Erinaceus roumanicus* (8), *Talpa europaea* (7), *Sorex araneus* (38), *S. minutus* (12), *Crocidura leucodon* (19), *C. suavolens* (1). Kotlán points out that *Talpa europaea* and *Sorex* spp. had previously been reported as hosts of *Trichinella spiralis* and suggests that his material was insufficient to justify definite conclusions. The results of the expedition relating to other parasites (including those recovered from birds and reptiles) will be published later.

A.E.F.

310—Ärztliche Wochenschrift. Berlin.

- a. BRANDT, M., 1952.—“Über Askaridengranulome.” 7 (18), 408–412.

(310a) Brandt describes a case of *Ascaris granuloma* on the lower margin of the liver of a 33-year-old male and assumed to have been caused by calcification of *Ascaris* which had penetrated after a shot-wound of the abdomen.

A.E.F.

311—Agricultural Chemicals. Baltimore.

- a. TAYLOR, A. L., 1952.—“Progress and prospects in the chemical control of nematodes.” 7 (11), 39–41, 123.

(311a) Taylor gives a general review of the use of soil fumigants for controlling plant parasitic nematodes and indicates the prospects for the increased use of such nematicides in the future.

M.T.F.

312—Agricultural Gazette of New South Wales.

- a. CHRISTIE, D. G., 1952.—“Diseases of turkeys.” 63 (6), 304–309.
b. ANON., 1952.—“Seed-borne diseases of potatoes.” 63 (6), 321–325.

(312a) In turkeys in New South Wales, *Ascaridia galli* and tapeworms are not of much importance. *Heterakis gallinae* can be controlled by feeding 1 lb. of phenothiazine in the mash for 1,000 birds but it does not affect the course of blackhead in a flock.

R.T.L.

(312b) *Heterodera marioni* is one of the most serious tuber-borne parasites of the potato in New South Wales. The presence of a single affected tuber in a crop submitted for seed certification results in the rejection of the whole crop.

R.T.L.

313—Agricultural Ireland.

- a. CARROLL, J., 1952.—“Eelworm and insect pests.” 9 (8), 172–173.
b. CARROLL, J., 1952.—“Eelworm and insect pests.” 9 (9), 201, 203.

(313a) Carroll gives a general account of eelworm pests, dealing firstly with the root eelworms. He states that in Ireland *Heterodera rostochiensis* occurs in many areas, particularly in fields and gardens where potatoes have been grown annually for long periods. So far *H. schachtii* has not been detected on sugar-beet, mangels or crops of the cabbage family. *H. major* has recently been detected on oats and may prove of considerable importance. A few instances of *H. göttingiana* and *H. cruciferae* have also come to notice but they are not yet pests of much consequence.

R.T.L.

(313b) Continuing his account of eelworm and insect pests, Carroll deals secondly with eelworms which attack parts of the plant other than the roots. So far there is little evidence that the clover strain of the stem eelworm and the potato stem eelworm are of economic importance in Ireland. Two species attack chrysanthemums and strawberries, violets and other garden plants. In Ireland determined efforts are being made to propagate eelworm-free strawberry runners and so far eelworm in black currants is not of any consequence. R.T.L.

314—Agricultural Journal. Department of Agriculture, Fiji.

- a. PAYNE, W. J. A., 1952.—“Goat husbandry. Some observations based on the results of the first eighteen months work with the goat herd at Sigatoka.” 23 (2), 25–27.

(314a) There is a high mortality among goats in Fiji. At Sigatoka, where the cause of most of the deaths was attributable to helminths, drenching with phenothiazine controlled the infections sufficiently to allow the animals to thrive under local management conditions. R.T.L.

315—American Heart Journal.

- a. VESELL, H. & SCHACK, J. A., 1952.—“Schistosomal heart disease: bilharzic cor pulmonale.” 44 (2), 296–305.

(315a) Clinical details with electrocardiograms, angiocardigrams and a teleoroentgenogram are given of a case of schistosomal heart disease diagnosed during life. R.T.L.

316—American Journal of Hygiene.

- a. HSIEH, K. N., 1952.—“The effect of the standard pinworm chemotherapeutic agents on the mouse pinworm *Aspicularis tetraptera*.” 56 (3), 287–293.

(316a) *Aspicularis tetraptera* is useful for screening drugs for anthelmintic use in pinworm infection of man. The reduction of the worm burden in mice by phenothiazine, gentian violet and tetrachlorethylene is statistically significant, but the reduction by egressin, hexylresorcinol or diphenan is not. R.T.L.

317—American Journal of Pathology.

- a. UNGAR, H. & UNGAR, R., 1952.—“Further studies on the pathogenesis of urate calculi in the urinary tract of white rats.” 28 (2), 291–301.

(317a) In this purely pathological study mention is made of the occurrence of a partially calcified *Trichosomoides crassicauda* embedded in the epithelium of the renal pelvis of an experimental white rat. G.W.

318—American Journal of Tropical Medicine and Hygiene.

- a. EDGAR, S. A., BEYE, H. K. & MILLE, R., 1952.—“A preliminary report on a ‘periodic tendency’ of microfilariae of *Wuchereria bancrofti* observed in Tahiti, French Oceania.” 1 (6), 1009–1019.

(318a) Statistical support is given to the view that the “non-periodic” filaria in man in the South Pacific has a diurnal periodicity. In Tahiti the peak is reached around 6 p.m. or 7 p.m. instead of between 10 p.m. and 2 a.m. in other parts of the world. Apart from this there is little evidence that the parasite in the Pacific is not *Wuchereria bancrofti*. A single 20 cu. mm. smear in routine surveys is inadequate, but if used the film should be taken in the afternoon. R.T.L.

319—American Journal of Veterinary Research.

- a. LEVINE, N. D. & IVENS, V., 1952.—“The effect of some n-heterocyclic compounds on the developmental stages of horse strongyles.” **13** (49), 520–525.
- b. GOLDBERG, A., 1952.—“Experimental infection of sheep and goats with the nematode lungworm, *Dictyocaulus filaria*.” **13** (49), 531–536.

(319a) In tests with pyridine and various derivatives on strongylid larvae of which 99.4% were those of small strongyles, the most toxic was 2-hexylpyridine which killed at concentrations of 0.00025 M. Nicotine sulphate killed at 0.00038 M. Chlorinated 3-methylpyridine, mixed dipyriddyis from 2-methylpyridine and N-n-dodecylpiperidine were effective at 0.0025 M. 2-vinylpyridine and 2-vinyl-6-methylpyridine and the sulphates of dipyriddyis from 2-methylpyridine and 1,2-di-(2'-pyridyl) ethane were lethal at 0.005 M and 2-aminopyridine at 0.01 M. The results of the remainder of the 93 compounds tested are tabulated; many were inactive.

R.T.L.

(319b) Lambs experimentally infected with larvae of *Dictyocaulus filaria* had intermittent coughing from the 19th to 43rd day, shallow rapid breathing, lung râles, loss of appetite and of weight—usually in the fourth week after infection. Worm-free adults were not nearly so susceptible as similarly infected lambs. In four animals, sexually immature adult worms, one fifth to one quarter of the usual size, were recovered in 83 to 186 days after infection. Variation in individual resistance was evident from the duration of the symptoms and the lack of marked correlation between the number of larvae administered and the larval output.

R.T.L.

320—American Midland Naturalist.

- a. ACKERT, J. E., 1952.—“Some influences of the American hookworm.” **47** (3), 749–762.
- b. SHORT, R. B., 1952.—“Uniparental miracidia of *Schistosomatium douthitti* and their progeny (Trematoda, Schistosomatidae).” **48** (1), 55–68.
- c. CHANDLER, A. C., 1952.—“Two new species of *Oochoristica* from Minnesota skunks.” **48** (1), 69–73.
- d. MURPHY, M. F., 1952.—“Ecology and helminths of the Osage wood rat, *Neotoma floridana osagensis*, including the description of *Longistriata neotoma* n.sp. (Trichostrongylidae).” **48** (1), 204–218.
- e. KAGAN, I. G., 1952.—“Revision of the subfamily Leucochloridiinae Poche, 1907 (Trematoda: Brachylaemidae).” **48** (2), 257–301.

(320a) Ackert reviews the influence which the recognition of *Necator americanus* in the U.S.A. has had on the creation and development of institutions, such as the Rockefeller Sanitary Commission for the Eradication of Hookworm Disease, the Rockefeller Foundation, the International Health Board, the China Medical Board, the Johns Hopkins School of Hygiene and the Peiping Union Medical College, and the part which these and other organizations have played in transforming the life standards of millions of people in America and elsewhere.

R.T.L.

(320b) The uniparental miracidia of *Schistosomatium douthitti*, i.e. miracidia which develop parthenogenetically in unisexual infections, are entirely normal in structure and activity but are smaller than those derived from mixed infections. They are infective, but only seldom, to laboratory reared *Limnaea palustris* and *L. stagnalis* and the cercariae are infective to mice, but the number of worms recovered is lower than from infections with normal cercariae and the adult worms are smaller in size. The males and females matured in unisexual infections. Most of the eggs appeared to be dead and degenerate but the miracidia which developed in a few had developed parthenogenetically.

R.T.L.

(320c) *Oochoristica wallacei* n.sp. from *Spilogale interruptus* collected near Minnesota resembles the other species in North American skunks but is much broader. *O. herpestis* has much larger eggs and the genital pores alternate irregularly. It is much longer than *O. mephitis* with about four times as many proglottides and a much larger scolex. It has a larger scolex, smaller sucker and eggs, and is twice as broad as *O. oklahomensis*. *O. pedunculata* n.sp. from

Mephitis sp. differs from all other species of the genus in having pedunculate suckers. The eggs are larger, measuring $55\mu-65\mu \times 45\mu-55\mu$. The onchospheres, which measure $32\mu-34\mu$ in diameter, have hooks 21μ long. R.T.L.

(320d) *Neotoma floridana osagensis* in Payne County, Oklahoma, were frequently infected with *Longistriata neotoma* n.sp., which differs from *L. dubia* in having longer spicules, shorter oesophagus and no prebursal papillae. *Böhmella wilsoni*, *Trichuris muris* and *Taenia taeniaeformis* are new to this host. Two specimens of *Andrya* sp. (possibly *A. macrocephala*) were also found. R.T.L.

(320e) In this revision the subfamily Leucochloridiinae has been emended to include *Urotocus* (2 species), *Urogonimus* (14 species), *Leucochloridium* (10 species) and *Neoleucochloridium* n.g. which is characterized by a triangular arrangement of the genital glands, the long, pustulated cirrus, the forward extension of the uterine loops which are intracaecal, and the opening of Laurer's canal into the excretory bladder. The type species is *N. problematicum* (Magath, 1920) n.comb. (= *L. sorae* McIntosh). *L. macrostomum* of Witenberg, 1925 is renamed *Urogonimus witenbergiella* n.sp. *Distomum macrostomum* of Zeller, 1874 is a synonym of *L. paradoxum* Carus, 1835. *D. macrostomum* of Heckert, 1889 is renamed *L. heckerti* n.sp. *D. caudale* Rudolphi, 1809 and of Mueller, 1898 is synonymous with *Urogonimus caryocatactis* (Zeder, 1800). Braun's designation of Diesing's species *D. caudale* Rudolphi as *Harmostomum caudale* (Rudolphi) and of *D. mesostomum* Rudolphi as *H. mesostomum* (Rudolphi) are shown to be errors. *Harmostomum caudale* has been renamed *Brachylaemus brauni*. *Leucochloridium insigne* is synonymous with *L. heckerti* n.sp., *Leucochloridium* sp. Hsü in *Pavoncella pugnax* with *L. paradoxum*, *Leucochloridium* sp. Hsü in *Vanellus vanellus* with *L. heckerti*, *L. acititis* with *L. cyanocittae*, and *L. pricei* with *L. variae*. Kagan has restudied the type specimens of *Urogonimus icteri* and *U. vireonis* and finds that the genital pore is terminal, not subterminal, Laurer's canal opens on the dorsal surface and the uterine loops follow the pattern typical of *Urogonimus*. Keys are given for the genera of Leucochloridiinae and for the species of *Urogonimus*, *Leucochloridium*, *Urotocus* and *Neoleucochloridium*. The species also listed under their hosts. R.T.L.

321—Anais do Instituto de Medicina Tropical. Lisbon.

- a. ALMEIDA, C. G. L. DE, 1952.—“Ensaio terapêutico com o hetrazan em casos de infestação por *Acanthocheilonema perstans*.” 9 (1), 127–144. [English & French summaries pp. 142–143.]

(321a) In view of the discordant results reported by other investigators on the sensitivity of *Acanthocheilonema perstans* to hetrazan, Almeida has used large doses on negroes of the Manjaca tribe of Portuguese Guinea where the infection is common. When daily doses of 10 to 12 mg. per kg. body-weight were administered for eight to 15 days, the microfilariae disappeared from the blood in seven out of ten cases. Of the seven cases, three relapsed during the first and sixth month of observation but yielded to a further course of treatment. The three remaining cases resisted 12 to 15 mg. per kg. body-weight, even after a second course. R.T.L.

322—Anais Paulistas de Medicina e Cirurgia.

- a. COUTINHO, J. O., CAMPOS, R. & AMATO NETO, V., 1952.—“Notas sobre o diagnóstico e a incidência da esrongiloidose em São Paulo.” [Abstract.] 63 (2), 96. [Discussion p. 96.]
b. MERCER, H. H., 1952.—“Pesquisa de *Strongyloides* na zona de Rio Preto.” [Abstract.] 63 (2), 98. [Discussion p. 98.]

(322a) Comparative results of four diagnostic techniques in 176 known cases of *Strongyloides* infection were: Baermann technique 90.9%, sedimentation 66.47%, petri dish 64.77% and direct examination 32.22%. The incidence of the infection in São Paulo was shown by the authors' own investigations to be 35.2%, compared with a maximum of 18.8% recorded in the literature. P.M.B.

(322b) In nine districts in and near the town of São José do Rio Preto (São Paulo State), an investigation in which 4,842 faeces examinations were made showed that the incidence of *Strongyloides* infection varied from 15% to 40.2% and that of hookworm from 53.8% to 81.8%. In the town itself the incidence of *Strongyloides* in children of school age was 62.7%. Examination of 288 samples by various techniques gave the following results, (i) *Strongyloides*: Baermann technique (modified by Morais) 71.8%, Faust 17.3%, Willis 13.5%; (ii) hookworm: Faust 63.5%, Willis 61%. P.M.B.

323—Anatomical Record.

- a. ULMER, M. J., 1952.—“*Mesomphix cupreus*, a new second intermediate host for *Brachylaemus virginiana* (Dickerson) Krull (Trematodas Brachylaemidae).” [Abstract of paper to be presented at the 49th Annual Meeting of the American Society of Zoologists, Ithaca, N.Y., September 8–10, 1952.] 113 (4), 613–614.

(323a) The finding of 13 out of 14 *Mesomphix cupreus* serving as second intermediate hosts of *Brachylaemus virginiana* in a wooded region along the banks of the Huron River, a few miles from Ann Arbor, Michigan, brings the number of snail and slug species harbouring metacercariae of this species to eight. The adults are parasites of the opossum and armadillo. The first intermediate host, *Mesodon thyroidus*, which may also serve as the second intermediate host, was also found heavily parasitized with metacercariae in this area. P.M.B.

324—Animal Health Leaflet, Ministry of Agriculture and Fisheries. London.

- a. ANON., 1952.—“Blackhead in turkeys.” No. 12, 2 pp. [Revision of 1949 Leaflet.]
b. ANON., 1952.—“Mange, worms, ringworm and miscellaneous disorders of rabbits.” No. 44, 6 pp.

325—Annales de l'Institut National de la Recherche Agronomique. Série C. Annales des Épiphyties.

- a. HOFFMANN, A., 1952.—“Répertoire analytique des espèces animales, nuisibles aux cultures en France (Métropole et départements d'Outre-Mer) ayant présenté d'intéressantes particularités en 1951.” 3 (3), 398–404.

(325a) In this list of pests observed in France, Hoffmann mentions *Heterodera schachtii* in sugar-beet, found in 1951 in the neighbourhood of Soissons (Aisne) where it threatens to become a serious pest and *Aphelenchoides ritzema-bosi* which was very common in chrysanthemum throughout France in 1951. R.T.L.

326—Annales de l'Institut Pasteur. Paris.

- a. DESCHIENS, R. & POIRIER, M., 1952.—“L'immunité dans les infestations parasitaires.” 83 (6), 725–744.

(326a) Deschiens & Poirier give a concise description, with examples, of the various types of immunity met with in parasitic infections, and compare these types with those found in bacterial and virus diseases. Natural immunity may be complete or partial; acquired immunity (as in the schistosomes) includes also premunition, which is defined as a state of latent infection rendering the host entirely or partly resistant to reinfection but in which removal of the parasites results in a complete loss of resistance. Actively induced immunity resulting from vaccination or the injection of dead antigen is rarely, if ever, found in helminth infections and immunity produced passively by the injection of serum obtained from an immune host is not of practical importance in parasitic diseases, although carriers of *Trichinella*, *Ascaris* and strongyles do appear to be less receptive, probably because they produce an antibody which acts on the larvae. There exists also both specific and group immunity. Defensive reactions are produced by phagocytosis (cellular immunity) or by secretions of the blood etc. (humoral immunity). Immune sera may have the following reactions, agglutinating, lytic, opsonising, precipitating, complement fixing, or sensitizing and allergic, of which the last

three are of particular application to helminth infections. The authors conclude their paper with an account of contributory factors (diet deficiencies, hormones etc.) which affect resistance, and descriptions of various reactions and techniques for performing diagnostic tests. S.W.

327—Annales de Parasitologie Humaine et Comparée.

- a. ARVY, L., 1952.—“Contribution à l'étude des trématodes parasites de *Columbella rustica* L. (Gastéropode prosobranch).” 27 (5), 485–498.
- b. VERMEIL, C., TOURNOUX, P., TOCHEPORT, G., NOGER, C. & SCHMITT, P., 1952.—“Premières données sur l'état actuel des bilharzioses au Fezzan (Lybie).” 27 (5), 499–538.
- c. LAGRANGE, E., 1952.—“Le centenaire d'une découverte: le cycle évolutif des cestodes (1852).” 27 (5), 557–570.
- d. THÉODORIDES, J., 1952.—“Le coléoptère scarabéide hôte intermédiaire naturel de *Spirocerca lupi* (Rud.) [= *S. sanguinolenta* (Rud.)], en Chine, n'est pas un *Canthon* mais un *Paragymnopleurus*.” 27 (5), 571–572.
- e. SCHWETZ, J., 1952.—“Sur un nouveau foyer de schistosome des rongeurs due à *Schistosoma rodhaini*. Découverte d'un nouvel hôte intermédiaire, *Planorbis tanganyikanus* Bourguignat.” 27 (6), 578–587.
- f. GALLIARD, H. & CHABAUD, A. G., 1952.—“Anomalies, s'éteignant par passage chez le chien, d'une souche de *Strongyloides stercoralis*, isolée d'un cas d'urticaire migrant. Comparaison avec différentes souches normales étudiées au Tonkin.” 27 (6), 588–597.

(327a) Arvy examined a number of *Columbella rustica* collected from Villefranche-sur-Mer, and found them parasitized by *Cercaria columbellae* and two new cercariae. *C. columbellae* develops in sporocysts, not rediae as originally described by Pagenstecher, and is redescribed in detail. *Cercaria tregouboffi* n.sp. develops in rediae which are found particularly in the gonad; it is a tiny cystophorous cercaria with a bell-shaped cyst and contains a large number of strongly Feulgen-positive nuclei. The rediae of *C. tregouboffi* occasionally contained a few much larger, tailless cercariae with muscular body walls; these are quite different from *C. tregouboffi* and are described and named *Cercaria franci* n.sp. The paper is illustrated throughout with drawings and photomicrographs of all three cercariae, made from living and fixed and sectioned material, and concludes with a summary of other records of hyperparasitism among trematodes. S.W.

(327b) Vermeil *et al.* have carried out an extensive survey of schistosomiasis haematobia in Libya. They followed the same plan as Nastasi during 1937 [for abstract see Helm. Abs., 7, No. 382a] and compare their findings with his. Urine examinations were made only on children for practical purposes and also because it was considered that they would give a truer picture of the incidence. Much of the data is presented for each locality in tabular form under infection rate, number of children examined, number positive and degree of infection (based on number of eggs in the urine), snails found, type of wells in the locality and the type of population. The water found in the wells was subjected to biochemical investigation and these results tabulated in a series of logarithmic diagrams. The discovery, for the first time, of *Bulinus* in the Ghat oases, explains the presence there of the already well known focus of schistosomiasis haematobia. S.W.

(327d) Théodorides is of the opinion that the beetle implicated as intermediate host of *Spirocerca lupi* in China, and frequently referred to as *Canthon* sp. in current text-books, is in fact a member of a closely related genus, *Paragymnopleurus*. The genus *Canthon* is restricted in its distribution to Central and South America. S.W.

(327e) Schwetz reports finding a new focus of *Schistosoma rodhaini* near Albertville. Among snails collected from the Lukuga river were a number of *Planorbis tanganyikanus* which were emitting schistosome cercariae; by a series of experimental infections in mice, Schwetz has shown these to be *S. rodhaini*. One mixed infection with *S. mansoni* was found. *P. tanganyikanus* has not been previously reported as an intermediary for *S. rodhaini*. S.W.

(327f) Galliard & Chabaud describe an unusual strain of *Strongyloides stercoralis* which was obtained in faecal culture from a patient suffering from creeping eruption contracted in

Tonking. The free-living adults were almost exactly double the normal size and the females produced far more larvae, although all other characters were typical of normal *S. stercoralis*. After being passaged twice through dogs, the size reverted to normal. As the patient left France, they were unable to determine whether the large size was due to the culture medium or was inherent in the strain. In other strains the size of the free-living adults and the fecundity of the females remained constant even after repeated passages; refrigeration of the larvae between passages reduced fecundity but this effect was reversible; subsection of the dog to irradiation by X-rays produced no appreciable effect on the Strongyloides obtained in faecal cultures. S.W.

328—Annales de la Société Belge de Médecine Tropicale.

- a. FAIN, A., 1952.—“*Biomphalaria alexandrina tanganyicensis* (E. A. Smith 1881) transmetteur de *Schistosoma mansoni* au Lac Albert.” 32 (3), 217–220. [Flemish summary p. 220.]
- b. FAIN, A. & LAGRANGE, E., 1952.—“Valeur curative des dérivés du Thioxanthone (Miracil D et Nilodin) dans les cas de parasitisme intense par *Schistosoma mansoni*.” 32 (3), 221–227. [Flemish summary p. 227.]
- c. JANSSENS, P. G., 1952.—“Remarques au sujet de la possibilité de manifestations nerveuses ou psychiques causées par les filarioses.” 32 (3), 229–234. [Flemish summary p. 234.]
- d. KIVITS, M., 1952.—“Quatre cas d'encéphalite mortelle avec invasion du liquide céphalo-rachidien par *Microfilaria loa*.” 32 (3), 235–242. [Flemish summary p. 242.]
- e. PARENT, M. & VERBRUGGEN, J., 1952.—“Contribution à l'étude du problème de la bilharziose au Katanga.” 32 (3), 255–268. [Flemish summary p. 267.]
- f. PEEL, E., MESTDAGH, M. & MATHIEU, J., 1952.—“Note sur la fréquence du paludisme et des filarioses au Centre extra-coutumier de Costermansville.” 32 (3), 269–274. [Flemish summary pp. 263–264.]
- g. FAIN, A., 1952.—“Description de la cercaire de *Schistosoma intercalatum* Fischer 1934 et d'une nouvelle xiphidiocercaire du groupe Ornatae (sous-groupe Prima).” 32 (5), 433–443. [Flemish summary p. 440. Discussion p. 440.]
- h. SCHWETZ, J., 1952.—“Sur un nouveau foyer de *Schistosoma rodhaini* avec un nouveau transmetteur.” 32 (5), 473–477. [Flemish summary p. 475.]
- i. TOMBERG, V. & LAGRANGE, E., 1952.—“Etude de l'action de quelques agents physiques sur les planorbes et les cercaires de *Bilharzia mansoni*.” 32 (5), 501–511. [Flemish summary p. 509.]

(328a) *Biomphalaria alexandrina stanleyi* (wrongly identified by Courtois & Wanson (1949), and Schwetz (1949) as *B. a. choanomphala*) in Albert Nyanza, and *B. a. pfeifferi* in streams some distance from the lake are already known to be vectors of *Schistosoma mansoni*. A third and somewhat rarer species, *B. a. tanganyicensis* (which according to Bequaert is a synonym of *Planorbis sudanicus* and should be named *B. a. sudanica*), has now been implicated. Laboratory-bred specimens have been successfully infected. Naturally infected wild specimens have been collected from the mouth of the river Aü and in the village of Kawa near the lake, but none from the lake itself. R.T.L.

(328b) Of thirty-three severe cases of *Schistosoma mansoni* from four villages in the endemic focus at Albert Nyanza treated with 120 mg. per kg. body-weight, 16 received sugar-coated tablets of miracil D and 17 of Nilodin. Three were completely cured. In the remainder the number of eggs in the faeces was much reduced. In nine of these cases a second course of treatment again reduced the number of eggs but did not result in a complete cure. R.T.L.

(328c) Janssens reviews the various cases reported in the literature in which varied nervous and psychic manifestations were thought to be associated with various filarial invasions of the central nervous system. R.T.L.

(328d) In four fatal African cases of encephalitis the cerebrospinal fluid, which in other respects was normal, contained numerous microfilariae of *Loa loa*, although hetrazan had been administered. R.T.L.

(328e) In the villages of Buluo and Kaponona, about six kilometres from Jadotville, the incidence of *Schistosoma* eggs in the faeces was 42.46% and in the urine 59.85%. On 19 occasions *S. mansoni* eggs were present in the urine and eggs of *S. haematobium* were found

13 times in the faeces. Examination of molluscs collected from various sites showed that 34.9% of *Planorbis adowensis* and 12.2% of *Physopsis africana* contained schistosome furcocercariae. *Limnaea natalensis* was not infected.

R.T.L.

(328g) Fain describes in detail and illustrates the cercaria of *Schistosoma intercalatum* from *Physopsis africana* collected from a branch of the Congo River at Stanleyville. It differs from the cercaria of *S. mansoni* chiefly in the presence of five pairs of unicellular penetration glands instead of six pairs. There is a cephalic gland, and a hyaline zone around the caudal excretory canal, and there are also slight differences in the measurements of the caudal trunk. The two ciliated areas present in the main excretory canals of *S. mansoni* could not be observed. *Cercaria meyersi* n.sp. from *P. africana* differs from the cercaria of *Pneumonoeces variegatus* in having the cercarial body covered with small spines which are directed posteriorly; they are absent from the tail.

R.T.L.

(328h) *Schistosoma rodhaini* has now been found at Albertville on Lake Tanganyika and on the river Lukuga. Eggs and adults were present in wild rodents of the genera *Dasymys*, *Pelomys* and *Mastomys* captured in the neighbourhood. The local vector is *Planorbis tanganykanus*.

R.T.L.

(328i) Tomberg & Lagrange have studied experimentally the effect of short waves, ultrasonic waves and ultra-violet rays on cercariae and planorbid. Various commercial appliances were used with a view to developing an apparatus suitable for use in swimming pools and stagnant water. Short and ultra-short waves have the largest field of action but their destructive effect is limited to a specific thermal action. The field of action of ultrasonic waves is smaller but there is a double destructive effect, a specific thermal action and a mechanical and chemical action by cavitation. Ultra-violet rays had the smallest field of action, the intensity of radiation being rapidly attenuated by the water. The authors conclude that, while it is technically possible to sterilize (from the point of view of schistosomiasis) swimming pools etc. by these means, the high cost renders them impracticable at present.

S.W.

329—Annales Universitatis Mariae Curie-Skłodowska, Lublin.

- a. SOŁTYS, A., 1952.—“Pasożyty wewnętrzne ryjówki aksamitnej (*Sorex araneus* L.) Białowieckiego Parku Narodowego.” Sectio C, 6 (5), 165–209. [English & Russian summaries pp. 202–209.]

(329a) From material collected from *Sorex araneus* by the Forestry Investigation Institute at Białowieża 13 nematodes, one acanthocephalan, eight trematodes and 17 cestodes are identified. Seven new forms are named, viz., *Synhimantus rhopalocephalus* n.sp., *Capillaria ventricola* n.sp., *C. oesophagicola* n.sp., *C. cholidicola* n.sp., *C. urinicola* n.sp., *Leucochloridium soricis* n.sp., *Panopisthus europaeus* n.sp. [none are differentiated from allied species]. An encysted Porrocaecum, a sparganum and a cysticercus are briefly described. *Ditestolepis* n.g. is made for *Hymenolepis diaphana* on account of the different arrangement of the suckers and the two testes, the cyclic maturation of the proglottides and the union of the uteri in mature segments. A description is given of the genital openings in *Vigisolepis spinulosa*. These are on papillae. The cirrus covered with spines is prominent and the vulvar opening protrudes in the shape of a funnel.

R.T.L.

330—Annali di Medicina Navale e Tropicale.

- a. MOISE, R., 1952.—“Ancora sulle elmintiasi di interesse epidemiologico in Somalia (anchilostomiasi e schistosomiasi) e sull'adozione dei sistemi per combatterle.” 57 (3), 279–297.

(330a) Moise presents a critical summary of the literature on ancylostomiasis and schistosomiasis in Somaliland, drawing attention to the need for a more thorough investigation and for the adoption of control measures.

P.M.B.

331—Annals of Applied Biology.

- a. PETERS, B. G., 1952.—“Pot tests of nematicides against potato-root eelworm. I. Pilot test and methods.” **39** (4), 447-456.
- b. FENWICK, D. W., 1952.—“The bio-assay of potato-root diffusate.” **39** (4), 457-467.
- c. GOODEY, J. B., 1952.—“The influence of the host on the dimensions of the plant parasitic nematode *Ditylenchus destructor*.” **39** (4), 468-474.
- d. GROSSE, J. E. & PITCHER, R. S., 1952.—“Studies in the relationship of eelworms and bacteria to certain plant diseases. I. The etiology of strawberry cauliflower disease.” **39** (4), 475-486.

(331a) Peters describes a pot-test for evaluating the effects of nematicides injected into soil, infested with potato root eelworm, in 8-litre glazed pots. In this test D-D mixture and ethylene dibromide (5% v/v. in solvent naphtha) were used, with two ineffective substances, at 0, 1, 4 and 16 ml. per pot of 20 lb. soil. After 7 weeks the soil was sampled and a tuber was planted. The height of the haulms after 3 weeks showed strong phytotoxic effects from the highest rates. At the end of the season the yield of new tubers reflected this effect, whereas the lower rates of both nematicides led to an increased yield. A final soil sample was taken. The two sets of soil samples were processed to give counts of cysts per gm. and larvae per cyst hatching in root diffusate. The earlier set gave estimates of percentage kill, up to 97% (with D-D better than ethylene dibromide), while the later set showed a considerable recovery in the eelworm population at moderate and low rates. There is evidence that D-D continued to kill after the earlier samples were taken.

B.G.P.

(331b) Fenwick describes experiments on the effect of diluting potato root diffusate. On the basis of data obtained from these experiments, he describes a technique for estimating the strength of any given sample. The final standardization is expressed as “L.A.” units which are a direct arithmetic measure of the biological activity of any given sample and a logarithmic measure of its concentration.

D.W.F.

(331c) Different host plants of *Ditylenchus destructor* are shown to influence the dimensions and in particular the body lengths of the eelworms. Data for body lengths show significant differences between population means from different hosts. Data are tabulated and also shown in diagrammatic form.

J.B.G.

(331d) After summarizing the several types of disease symptoms in strawberry which have been attributed to the presence of species of *Aphelenchoides*, namely cauliflower disease, red plant and open centre plants, Crosse & Pitcher describe the investigations made to elucidate the respective roles of nematodes and bacteria in the aetiology of the diseases. From diseased field-grown plants they isolated *Aphelenchoides* species and *Corynebacterium fascians* (Tilford) Dowson. Eelworm-free plants were inoculated with *A. ritzema-bosi* and with three strains of *C. fascians*, the nematodes and one strain of *C. fascians* separately, and nematodes together with each of the three strains of bacteria in three mixed suspensions. Each treatment was replicated five times and was given in December. Another series of experiments using only one strain of bacterium and replicated 10 times was made in March and re-inoculated in April. Detailed records are given of the symptoms produced over a period of several months. In the absence of nematodes no abnormalities appeared. Typical cauliflower symptoms were produced only when both nematodes and a strain of *C. fascians* originally isolated from cauliflower strawberries were present together. When nematodes alone were inoculated small alamine leaves and enations on petioles and the undersides of leaf veins were produced, but contaminant strains of *C. fascians* were found on the experimental plants. It is concluded that nematodes alone do not produce cauliflower symptoms and enations but that certain strains of *C. fascians* must also be present. The relative roles of these two organisms are uncertain but it seems likely that the nematodes act as vectors. Possibly the different symptoms in nematode-infested strawberry plants are due to differences in the strain of bacterium present. It is suggested that similar relationships between nematodes and bacteria may occur in other plant diseases.

M.T.F.

332—Annals and Magazine of Natural History.

- a. RAWSON, D., 1952.—“The occurrence of parasitic worms in British freshwater fishes.” Ser. XII, 5 (58), 877-887.

(332a) Rawson has collected 25 helminth species from 160 specimens of English freshwater fishes belonging to 13 species. Tables show the proportion of each species of fish infected and the locality, the name of the parasite and the part infected. The occurrence of *Bothriocephalus claviceps* in Britain is new. It was found in the stickleback and in the pike. The presence (possibly accidental) of *Triaenophorus lucii* in the eel is a new record. R.T.L.

333—Annals of the New York Academy of Sciences.

- a. BROWN, H. W., 1952.—“The use of antibiotics in the treatment of helminthic infections.” 55 (6), 1133-1138.

(333a) Brown summarizes published literature and personal communications on the effect of antibiotics on helminths, and briefly describes the results of his own work on dogs and cats in which terramycin in large doses was only partially effective against *Toxocara canis* and had little or no effect against *Ancylostoma caninum*. R.T.L.

334—Annals of Tropical Medicine and Parasitology.

- a. SARKIES, J. W. R., 1952.—“Onchocerciasis and trachoma in the Gold Coast.” 46 (3), 214-217.
 b. AMBERSON, J. M. & SCHWARZ, E., 1952.—“*Termitidens deminutus* Railliet and Henry, a nematode parasite of man and primates.” 46 (3), 227-237.
 c. GREANY, W. H., 1952.—“Schistosomiasis in the Gezira irrigated area of the Anglo-Egyptian Sudan. I.—Public health and field aspects.” 46 (3), 250-267.
 d. KERSHAW, W. E. & WILLIAMSON, J., 1952.—“Studies on the chemoprophylaxis of experimental filariasis with MSb (Friedheim). I.—The prophylactic activity during an interval of six months.” 46 (3), 268-275.
 e. HOPKINS, C. A. & NICHOLAS, W. L., 1952.—“*Culicoides austeni*, the vector of *Acanthocheilonema perstans*.” 46 (3), 276-283.
 f. GREANY, W. H., 1952.—“Schistosomiasis in the Gezira irrigated area of the Anglo-Egyptian Sudan. II.—Clinical study of schistosomiasis mansoni.” 46 (4), 298-310.
 g. WILLIAMSON, J. & KERSHAW, W. E., 1952.—“Studies on the chemoprophylaxis of experimental filariasis with MSb (Friedheim). II.—The retention and distribution of the drug.” 46 (4), 320-330.

(334a) From an analysis of ophthalmic cases seen by Sarkies on the Gold Coast, it is apparent that onchocerciasis and trachoma are the most frequent causes of ophthalmic morbidity and blindness in certain areas. Onchocerciasis is the commonest eye disease in the Mamprussis tribe, in which the blindness rate is 10.4 per 1,000, and in the Wa district where the rate is 9.4 per 1,000. R.T.L.

(334b) *Termitidens deminutus* may occur throughout the human intestine, from the duodenum to the colon. Records of its occurrence in nine other primates are briefly summarized. The geographical distribution in Africa and Asia is marked on two maps. It is pointed out that the statement by Strong & Shattuck (1930) that *T. deminutus* occurs in the eastern mountain gorilla (*Gorilla beringei*) is an error in citation. R.T.L.

(334c) There has been a slow and steady increase in the incidence of *Schistosoma haematobium* and *S. mansoni* in the irrigated Gezira area in the Anglo-Egyptian Sudan. Both species are now widely distributed throughout the region. Examination of the urine and faeces of 80,000 people living in 300 villages showed that nearly 9% were infected. The two schistosome species occurred in almost equal proportions, but immigrants of less than five years' standing were more frequently infected than the local population. Where there was a well in the village or if the nearest canal was more than 1 km. distant there was a lower incidence of infection. The canals are wide and shallow. The vector species of *Bulinus* and *Planorbis*

were evenly distributed and occurred side by side. Destruction of aquatic weeds by salts of dichlorophenoxyacetic acid contributed greatly to snail control. R.T.L.

(334d) A dose of 125 mg. of MSb per kg. body-weight gave cotton-rats nearly complete protection for six months against experimental infection with *Litomosoides carinii*. Doses of 60-70 mg. per kg. body-weight gave good protection for four months and partial suppression for a further two months. A dose of 15 mg. per kg. body-weight gave protection for three months. R.T.L.

(334e) By infecting laboratory-bred flies raised from instars and pupae of *Culicoides austeni*, Hopkins & Nicholas have confirmed Dyce Sharp's claim that this night-biting midge is a vector of *Acanthocheilonema perstans*. Experimentally-fed wild *C. grahami* showed a much higher rate of infection than that in the wild fly population but this species is considered to be a possible but poor vector as the percentage of *A. perstans* larvae found was much lower than in *C. austeni*. It may however prove the more important vector in those regions where it is much more abundant than *C. austeni*. R.T.L.

(334f) The clinical symptoms of 410 hospital cases of schistosomiasis *mansoni* seen in the Gezira irrigated area of the Anglo-Egyptian Sudan are discussed and tabulated. The sigmoidoscopic appearances are described. The results are given of treatment by (i) intensive short courses of antimony preparations, (ii) routine long courses of tartar emetic and (iii) miracil-D. A study of the relation of hepatic cirrhosis to schistosomiasis and malnutrition suggests that these cirrhotic changes would not be found in the community in the absence of schistosomiasis as the level of nutrition is adequate. R.T.L.

(334g) Cotton-rats injected intraperitoneally with a single protective dose of MSb were exposed six months later to infection with *Litomosoides carinii* by the bites of *Bdellonyssus bacoti*. Appreciable and persistent levels of antimony proportional to the MSb dose were found in the liver, kidney, gut, lungs, fatty connective tissues and gonads. It was also noticed that an interval of six months was too long for all doses below 250 mg. per kg. body-weight to give protection. It is estimated that excellent protection for two to four months is given by doses of 31.6-125 mg. per kg. body-weight. These results are comparable with those resulting from a single subcutaneous injection of MSb in oil. 125 mg. per kg. body-weight gave almost complete protection for six months, and 60-70 mg. per kg. body-weight gave protection for four months and partial protection for a further two months. 35 mg. per kg. body-weight resulted in partial suppression of the infection for at least five months. It is not yet known where this prophylactic action of MSb takes place. R.T.L.

335—Annual Review of Microbiology.

a. CHITWOOD, B. G. & OTEIFA, B. A., 1952.—“Nematodes parasitic on plants.” 6, 151-184.

(335a) Chitwood & Oteifa have compiled a valuable review of the progress in our knowledge of plant parasitic nematodes based on work published between December, 1939 and February, 1952. A wide field of study is covered and the subject is dealt with under two main heads, viz.: (1) Taxonomy, Host Range and Bionomics; (2) Physiological Behaviour and Control. Under the former the advances achieved are set out and briefly discussed under the following: (i) The genus *Heterodera* Schmidt, (ii) The genus *Meloidogyne*, (iii) Population dynamics and plant growth, (iv) The genus *Pratylenchus* Filipjev, (v) The family *Cricone-matidae*, (vi) *Tylenchus semipenetrans*, (vii) Other root parasites and associates, (viii) The genus *Ditylenchus* Filipjev, (ix) The *Aphelenchs*, (x) The genus *Anguina* Scopoli. Under the second main heading the following are dealt with: (i) Hatching stimulants and root attractives, (ii) Plant nutrition and mineral content, (iii) Phytotherapy, (iv) Other control measures, (v) Soil treatment, (vi) Natural enemies. The article concludes with a list of 270 titles of papers cited. T.G.

336—Anzeiger für Schädlingkunde.

- a. GOFFART, H., 1952.—“Zur Frage der Bekämpfung von Nematoden mit Methylbromid.” 25 (7), 104-106.

(336a) Noting from the literature that methyl bromide is highly nematocidal (but dangerously phytotoxic) under gas-tight conditions, Goffart has used it in a gas chamber at 20°C. on potato tubers, sugar-beet seed, shallots, lily-of-the-valley pips, and soil infested with *Heterodera schachtii* and *H. rostochiensis*. In terms of gramme-hours per cubic metre (“gst-Wert”), harmful effects on the subsequent growth of tubers appear at values of 200, and of sugar-beet and shallots at about 350. Damage to lily-of-the-valley begins at about 200 gramme-hours per cubic metre, while over 600 is recommended for treating air-dry soil to kill *Heterodera* larvae. On the other hand, solutions of 20% methyl bromide injected into open ground at 62 gm. per square metre, at points 30 cm. × 30 cm. apart, and with a water seal, gave poor results.

B.G.P.

337—Archives de Biologie. Paris.

- a. NIGON, V. & DELAVAUT, R., 1952.—“L'évolution des acides nucléiques dans les cellules reproductives d'un nématode pseudogame.” 63 (3), 393-410.

(337a) Nigon & Delavault describe the staining techniques used in their observations on the growth and maturation of the germ cells in *Rhabditis belari*, a pseudogamous species. They found the development to be analogous with that of *Parascaris equorum*. In the oocyte the pyrinophilic substances diminish slowly during growth and the nucleolus disappears shortly before the maturation divisions begin; in contrast, during spermatogenesis there is a sudden expulsion of ribonucleic acid at the moment of division. The staining reactions of the mature ovum are very different from those of the oocyte. During division there is an accumulation of ribonucleic granules round the spindle and a pyrinophilic zone appears near the spermatozoid when it penetrates the ovum. Just before segmentation begins, a cortical pyrinophilic zone appears at the poles and seems to be associated with the parts of the cytoplasm which are moving, suggesting a possible causal relationship.

S.W.

338—Archives of Dermatology and Syphilology.

- a. KITAMURA, K., 1952.—“Gnathostomiasis in Japan.” 66 (2), 276-281.
b. ORRIS, L. & COMBES, F. C., 1952.—“Clam digger's dermatitis. Schistosome dermatitis from sea water.” 66 (3), 367-370.

(338a) Almost all the cases of infection with *Gnathostoma* which have been reported in Japan have been acquired abroad and often in the Yangtze Valley in China. In 1924, Kinoshita described a case of creeping eruption from which a larva of *G. hispidum* was extirpated. Since 1946, when Yoh reported an endemic case of *G. spinigerum* from Kitagata in Saga Prefecture, Kyūshū, many instances of the disease have been observed in other places in Kyūshū as a result of eating the fish *Ophicephalus argus* which, imported from China in about 1926, is now propagated widely in Japan.

R.T.L.

(338b) An eruption, clinically identical with schistosome dermatitis, has recently occurred on the immersed portions of the skin in clam diggers working in shallow water in Cold Spring Harbour, New York, during the warm months, April to October. A personal communication from Stunkard states that he has found schistosome cercariae in these salt waters.

R.T.L.

339—Archives de l'Institut Pasteur du Maroc.

- a. DOLLFUS, R. P., 1952.—“Miscellanea helminthologica maroccana. IV. Affinités naturelles de *Pseudochetosoma salmonicola* R. Ph. Dollfus 1951 (famille Steganodermatidae nov.). Emendation de la superfamille Haploporoidea W. Nicoll 1935.” 4 (5), 369-386.
b. JOYEUX, C., 1952.—“A propos de *Coenurus* (ou *Multiceps*) *radians* Joyeux, Richet fils et Schulmann, 1922.” 4 (5), 387.

(339a) From a study of living material, Dollfus concludes that the trematode described by him in 1951 as *Ochetosoma* (*Pseudochetosoma*) *salmonicola* belongs to a new genus

Pseudochetosoma n.g. He is of the opinion that the subfamily Fellodistomatinae should include only those forms in which the uterus lies in front of the testes; those with the uterus behind the testes should be placed in the subfamily Steringophorinae. He emends the Haploporoidea to include only those with a simple excretory vesicle; those in which it is V or Y-shaped are placed in a new superfamily, the Fellodistomatoidea. There are 24 footnotes and a bibliography of 40 titles. S.W.

(339b) In this short note Joyeux replies to a criticism made by Dollfus & Chabaud in a footnote to their paper appearing in *Arch. Inst. Pasteur Maroc*, 1951, 4, p. 232. Dollfus & Chabaud were of the opinion that Joyeux, Richet and Schulmann had quoted wrongly the measurements of the hooks of *Coenurus glomeratus* Railliet & Henry, 1915. Joyeux points out that the dimensions given in the original description were inaccurate and were subsequently corrected by Railliet & Marullaz. S.W.

340—Archivio Italiano di Scienze Mediche Tropicali e di Parassitologia.

- a. LIPPI, M., 1952.—“Manifestazioni patologiche a carico dell'apparato respiratorio causate da alcune elmintiasi umane.” 33 (1), 11–53. [English, French & German summaries pp.50–51.]
- b. MASTRANDREA, G., 1952.—“Considerazioni sull'impiego terapeutico della fenotiazina e risultati ottenuti nel trattamento di alcune elmintiasi.” 33 (3), 138–150. [English, French & German summaries pp. 148–149.]
- c. CIAURI, G., 1952.—“Sulla sindrome pseudo-ulcerosa della anchilostomiasi.” 33 (3), 161–174. [English, French & German summaries pp. 172–173.]
- d. CICCHINI, T., 1952.—“L'eosinofilia midollare e periferica nella infestazione da anchilostomi.” 33 (6), 344–351. [English, French & German summaries p. 350.]
- e. CICCHINI, T., 1952.—“Aspetti della sintomatologia gastro-enterica nell'anchilostomiasi.” 33 (8), 462–473. [English, French & German summaries p. 471.]
- f. PASQUALINO, A., 1952.—“Sulla cisticercosi umana.” 33 (11), 591–604. [English, French & German summaries pp. 603–604.]

(340a) Lippi summarizes from the literature the pathological lesions of the respiratory tract caused in man by hookworm, *Ascaris*, *Schistosoma* and *Paragonimus*. R.T.L.

(340b) Mastrandrea states that 68% of his cases of oxyuriasis were cured by phenothiazine. The dose given to adults was 4.2 gm. No toxic symptoms were observed. In four cases of *Ascaris* infection the treatment proved unsatisfactory. R.T.L.

(340c) Pseudo-ulcerous ancylostomiasis in a case described by Ciauri was practically identical radiologically and clinically with the ulcerous-duodenal syndrome. R.T.L.

(340d) Cicchini confirms from the study of 12 cases of hookworm infection that there is a constant but variable increase but no parallelism in the peripheral and medullary eosinophils. It is possible that there is a reversed correlation between the degree of anaemia and of peripheral eosinophilia. R.T.L.

(340e) In ancylostomiasis, the duodenal syndrome may be limited to radiological manifestations but intestinal dyspepsia can result in dysenteric, pellagrous or sprue-like syndromes as well as in disorders of evacuation. R.T.L.

(340f) A case of subcutaneous cysticerciasis bovis in a girl in Palermo is recorded. The tissues around the cysts were granulomatous and contained giant cells. R.T.L.

341—Arkansas Farm Research.

- a. CRALLEY, E. M., 1952.—“Control of white tip of rice.” 1 (1), 6.

(341a) It is shown that *Aphelenchoides oryzae* Yokoo, the cause of white tip disease of rice, is carried in a viable state in the seed from infested plants and does not overwinter in the soil. Certain varieties of rice are resistant to the disease, namely, Arkansas Fortuna, Nira 43, Bluebonnet, Improved Bluebonnet, Century 231 and Century 52. As some important

varieties are susceptible, three methods of freeing seed from infestation were tried: (i) warm-water treatment, (ii) treatment with phosphate insecticides, (iii) fumigation with methyl bromide. The warm-water treatment involves 8 to 12 hours presoaking in cool water, 15 seconds preheating in water at 55°C., 15 minutes at 50°C.-53°C., 5 minutes in cool water and finally drying. The phosphate insecticide dusts used were 25% parathion, 50% Systox on carbon and 25% malathion all at about 2 oz. per bushel of seed: all show promise, especially the last. Fumigation with methyl bromide is also promising. With moisture content of the seed about 13%, methyl bromide at 1¼ lb. per 1,000 cu. ft. for 12 hours was used. The dosage depends on the moisture content of the seeds. Treatment of the seed is not necessary every year.

M.T.F.

342—Arkiv för Zoologi.

- a. ALLGÉN, C., 1952.—“Über einige freilebende Süßwasser-Nematoden von Mt. Kenya (Brit. Ostafrika). Ein kleiner Beitrag zur Kenntnis tropischer Nematoden.” Ser. 2, **3** (1/2), 139-157.

(342a) Allgén gives brief, technical descriptions of eleven species of fresh-water nematodes collected by Miss W. E. Frost in the vicinity of Mt. Kenya in the summer of 1948. The following are new to science and are illustrated: *Frostia pellucida* n.g., n.sp., *Trilobus höhnelensis* n.sp., *T. telekiensis* n.sp., *Actinolaimus frostae* n.sp., *Plectus kenyanus* n.sp. and *Monhystera somereni* n.sp.

R.T.L.

343—Arquivos de Biologia. São Paulo.

- a. VILELA, M. P. & HELMEISTER, O., 1952.—“Parasitosis intestinais em crianças (estudo de 431 casos).” **36** (308), 46-48.

(343a) Routine faeces examination showed that 79.9% of 431 children in São Paulo were positive for helminths. The species present were *Ascaris lumbricoides*, *Trichuris trichiura*, *Necator americanus*, *Hymenolepis nana*, *Strongyloides stercoralis* and *Enterobius vermicularis*. No special examinations were made for the last two species which were found in 24 and 5 children respectively. Two graphs show unexplained maxima for most of the species in children aged 7 and 10 years.

P.M.B.

344—Atti della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale in Milano.

- a. PUJATTI, D., 1952.—“Osservazioni sull'*Hymenolepis diminuta* (Rudolphi 1819) in India.” **91** (1/2), 38-42.

(344a) At Jalahalli, Bangalore, *Hymenolepis diminuta* occurred in 5 out of 34 *Nesocia bandicota*, 1 out of 81 *Tatera indica cuvieri*, 2 out of 38 *Mus musculus*, 23 out of 165 *Rattus rattus* and in 9 out of 75 other Muridae of various species. One case of human infection with *H. diminuta* was found during faeces examination of 2,236 Europeans at Bairagarh, Bhopal.

P.M.B.

345—Australian Journal of Science.

- a. ROBERTS, F. H. S., 1952.—“Host specificity of livestock parasites in Australia.” [Abstract of paper to be presented at Meeting of the Australian & New Zealand Association for the Advancement of Science, Sydney, August 1952.] **15** (1), 19-20.

(345a) Helminth parasites become adjusted to the physical and physiological environments of their hosts. The occurrence of a parasite species in more than one host species is indicative of a close phylogenetic relationship between these hosts. Australia is fortunate in that, with few exceptions, its wild fauna play little part in spreading parasites in live stock. The dingo and fox are important as they are alternative definitive hosts of parasites of the dog, the immature stages occurring in domestic ruminants. The only parasites of domestic

animals which occur in marsupials are liver-fluke and hydatid. Wild rabbits and hares also carry the liver-flukes. It is possible however that further investigations may add to the wild fauna which are concerned in the spread of live stock parasites. R.T.L.

346—Australian Journal of Scientific Research. Series B, Biological Sciences.

- a. ESSERMAN, H. B., 1952.—“The mode of action of phenothiazine as an anthelmintic. II. Phenothiazine in the intestinal fluid and nematode parasites of treated animals.” 5 (4), 485-495.

(346a) Esserman describes methods for the identification of phenothiazine by paper chromatography and microionophoresis using ^{35}S -labelled phenothiazine. The phenothiazine extracted from the intestinal contents of rats and chickens which had been dosed with the drug was associated with fatty material. No oxidation products of the drug were detected. The phenothiazine-fat complex was not obtained when phenothiazine was incubated anaerobically with intestinal contents *in vitro*. *Ascaridia galli* taken from chickens which had been dosed with phenothiazine contained the phenothiazine-fat complex. The acid-soluble fraction of the parasites contained 10% of the total ^{35}S present; 68% appeared in the alcohol-soluble fraction. Oxidation products of the drug were not detected. It is concluded that phenothiazine itself, and not its oxidation derivatives, is the anthelmintic agent. W.P.R.

347—Australian Plant Disease Recorder.

- a. FRASER, L. R., 1952.—“New records of foliar nematode.” 4 (3), 36.

(347a) *Aphelenchoides fragariae* which has not been reported previously from New South Wales causes dark, water-soaked blotches and destruction of the foliage of gloxinia and tuberous begonia, resulting ultimately in death of the whole plant. The disease was readily controlled by spraying with E.605 used at the rate of 1 oz. of commercial strength in two gallons of water. R.T.L.

348—Australian Veterinary Journal.

- a. DURIE, P. H. & RIEK, R. F., 1952.—“The role of the dingo and wallaby in the infestation of cattle with hydatids (*Echinococcus granulosus* (Batsch, 1786) Rudolphi, 1805) in Queensland.” 28 (10), 249-254.

(348a) Reports by slaughterhouse inspectors in Queensland during 1950-1951 show that of 39,242 cattle inspected, 31.01% had hydatid cysts. The highest incidence occurred in those coming from the Mary River Valley and the area extending south of Brisbane almost to the Queensland border. Landsborough gave the highest rate, 77.2%. In the adjoining region extending west to the Great Dividing Range and north to Calliope, the average incidence was 50%. On the Atherton tableland the incidence was similar. On the coastal fringe between Maryborough and Bowen it ranged from 10% to 40% and fell to less than 10% in the remaining portion of the coastal and subcoastal regions. Less than 1% of the hydatid cysts from the lungs and liver were fertile. Obviously cattle are of little or no importance as intermediate hosts for *Echinococcus granulosus*. This role is taken by local marsupials: 20% of the 65 examined were infected. None of the dogs examined showed evidence of infection. The definitive host is the dingo. Of 11 examined, nine were infected with adult *E. granulosus*; 33,000 examples were collected from one animal. Specimens of *Dipylidium caninum* were also recovered. Other tapeworms present were *Taenia serialis*, *T. hydatigena*, *T. pisiformis* and *Diphyllbothrium erinacei*. All of these are now recorded from this host for the first time. R.T.L.

349—Biochemische Zeitschrift.

- a. ČMELIK, S., 1952.—“Ein antigenes Polysaccharid aus den Echinococcuscysten.” 322 (6), 456-462.

(349a) Čmelik prepared polysaccharide antigenic materials from the membrane of *Echinococcus* cysts from pigs' livers. The best preparations were obtained from peptic digests

and consisted largely of aldohexoses and glucosamine. They contained little phosphorus. Some nitrogenous material was present. Intravenous injection of the polysaccharides, 0.1 mg. per kg. body-weight, caused toxic signs in rabbits. The material was unsuitable for complement-fixation reactions. It caused characteristic allergic skin reactions in infected individuals. W.P.R.

350—Boletín de la Asociación Médica de Puerto Rico.

- a. RODRÍGUEZ-MOLINA, R., 1952.—"Strongyloidiasis. Report of 100 cases." 44 (6), 234-239.
- b. RODRÍGUEZ-MOLINA, R. & OLIVER-GONZÁLEZ, J., 1952.—"Studies of hookworm disease in Puerto Rico. Preliminary report." 44 (10), 379-383.

(350a) A study of 100 Puerto Rican veterans infected with *Strongyloides* supported current medical opinion that the symptoms if present are usually mild, but occasionally they may be serious and even fatal. The effectiveness of gentian violet was not confirmed. R.T.L.

(350b) In Puerto Rico, hookworm disease was responsible for 2.1% of all deaths in 1933 and 1.8% in 1934. The mortality in 1950 fell to 0.9 per 100,000 of the population. This is attributed to the control and sanitation campaign instituted by the Insular Health Department. The authors are of the opinion that the problem in Puerto Rico is mainly economic and neither mass treatment nor anti-anaemic therapy will solve it as permanent cure is prevented by the return of the patients to the prevalent environmental and economic conditions. R.T.L.

351—Boletín. Centro Nacional de Investigación y Experimentación Agrícola de La Molina. Lima.

- a. WILLE, J. E. & BAZÁN DE SEGURA, C., 1952.—"La 'anguilula dorada' *Heterodera rostochiensis*. Una plaga del cultivo de las papas, recién descubierta en el Perú." No. 48, 17 pp.

(351a) The authors report the discovery in Peru in 1952 of *Heterodera rostochiensis* on potatoes. A map shows the results of a survey of potato-growing in 116 districts in 37 provinces of 9 departments. Infestations were found in 74 districts in 19 provinces in 8 of the departments. A brief account of the world distribution and life-history of the nematode and the damage it causes is followed by records of three new cultivated hosts found infested in Peru, *Ullucus tuberosus*, *Oxalis tuberosa* and *Chenopodium apulifolium*. Suspected, but unconfirmed, as hosts are *Vicia faba* and a weed, *Oenothera* sp. The authors consider that *H. rostochiensis* is an endemic pest in Peru and put forward the theory that it has spread from there to Europe and North America where it has become established comparatively recently. In Peru the potatoes are little damaged and control measures are considered unnecessary. M.T.F.

352—Boletín de Informaciones Parasitarias Chilenas.

- a. NAQUIRA, F., TAGLE, I. & NEGhme, A., 1952.—"La hemolisis condicionada en el diagnóstico de la hidatidosis. Comunicación preliminar." 7 (4), 52-53. [English summary p. 53.]
- b. NEGhme, A., SILVA, R. & ALVAREZ, M., 1952.—"Encuesta enteroparasitaria en el extremo austral de Chile." 7 (4), 61-63. [English summary p. 63.]
- c. FANTA N., E. & TAMARGO I., A., 1952.—"Quiste hidatídico hepático vaciado hacia el tubo digestivo. Resumen de un caso." 7 (4), 63-64.
- d. FANTA N., E., 1952.—"Pseudo abdomen agudo en el niño. Resumen de dos casos en ascariasis tratados con hetrazán." 7 (4), 64-65.
- e. DONCKASTER R., R. & FANTA N., E., 1952.—"Tratamiento de teniasis con acridínicos por intubación duodenal." 7 (4), 66-67.
- f. TAGLE V., I., 1952.—"Un caso de cisticercosis muscular en la oveja." 7 (4), 68.

(352a) The conditioned haemolysis test gave a positive reaction in 21 patients with hydatid cysts and was negative in 23 uninfected persons. R.T.L.

(352b) Examinations of the faeces of 371 persons in the most southern part of Chile, between 51°45' S. and 55° S. latitude, gave the following results: *Ascaris lumbricoides* 1.34% and *Trichuris trichiura* 14.55%; *Hymenolepis nana* occurred once and *Taenia* sp. twice. R.T.L.

(352d) The symptoms of acute abdomen which occurred in two children were attributable to perforation by *Ascaris* or to the administration of hetrazan. R.T.L.

(352e) The advantages of administering atebrin by duodenal sound and so avoiding vomiting are illustrated by its use in two out of three cases of *Taenia saginata* infection. R.T.L.

(352f) Tagle reports a case of muscular cysticerciasis in a sheep. No adults were found in dogs to which the cysts were fed. R.T.L.

353—Boletín Médico del Hospital Infantil. Mexico.

- a. VILLALPANDO DEL VALLE, E., 1952.—“La dietilcarbamazina (hetrazán) en el tratamiento de la parasitosis intestinal.” 9 (2), 165-170. [English summary p. 170.]

(353a) Hetrazan was given in doses of 10 mg. per kg. body-weight three times a day for eight days to 25 children having multiple infections with *Ascaris*, hookworm and whipworm. It proved effective only against *Ascaris*. No toxic effects were observed and the worms were evacuated without a purge. R.T.L.

354—Bollettino della Stazione di Patologia Vegetale. Rome.

- a. CICCARONE, A., 1952.—“Resultati di fumigazione nematocida in terreno ricco di organi vegetali carnosì, vivi e presentanti galle non decadute di *Heterodera marioni* (Cornu) Goodey.” Year 1950, Series 3, 8, 181-186. [English summary p. 186.]

(354a) Ciccarone describes a small field experiment, involving six plots, in a sandy soil infested with *Meloidogyne* sp. which had been spring-ploughed after winter carrots. D-D mixture was applied by hand-injector at 3 c.c. per point, 17 cm. deep, at points 30 cm. × 30 cm. apart on two plots, and at points 30 cm. apart along rows 1 m. apart on two plots, while two plots were untreated. At injection, two days after ploughing, there were many living carrot roots buried in the soil. Tomatoes, subsequently planted as an indicator crop, gave estimates of galls per plant as follows: 21 (total injection), 44 (row injection), and 235 (control), and also total yields from four pickings of respectively 280, 150, 142 kg. per three control rows per plot. It is concluded that total injection is desirable under conditions of this kind, and that it is unnecessary to await the decomposition of plant residues before injecting. B.G.P.

355—Brasil-Médico.

- a. MACIEL, H., 1952.—“Sôbre o diagnóstico da esquistosomose intestinal. (Considerações em tôrno das posturas do *Schistosoma mansoni* e da evolução dos seus ovos).” 66 (1/2), 3-12.

356—British Journal of Nutrition.

- a. WHITE, E. G. & CUSHNIE, G. H., 1952.—“Nutrition and gastro-intestinal helminths in sheep on hill grazing: the effect of a dietary supplement on faecal worm-egg counts, worm burden, body-weight and wool production.” 6 (4), 376-386.

(356a) No significant effect on weight gain, worm burden or weekly helminth egg count was observed in 25 Blackface ewes on hill grazing when given a daily supplementary ration of 1 lb. of a mixture of one part ground oats and two parts linseed cake. Lambs from these ewes, however, with access to the supplement and receiving up to 1 lb. per day after weaning, had reduced helminth egg counts with a smaller seasonal rise and marked increase in body-weight and wool production over those lambs receiving no supplement. During the two-year period of observation egg counts and total worm count were low and there was no case of clinical helminthiasis. P.M.B.

357—British Journal of Pharmacology and Chemotherapy.

- a. HAWKING, F., ORMEROD, W. E., THURSTON, J. P. & WEBBER, W. A. F., 1952.—“The antilarial action and toxicity of methylene violet and of other compounds of the phenosafranine series.” 7 (3), 494–508.

(357a) Although methylene violet kills the adult *Litomosoides carinii* in cotton-rats, it has no significant action on *Wuchereria bancrofti*, *Acanthocheilonema perstans* or *Onchocerca volvulus* in man when given in comparable doses and it is thought unlikely that other members of the phenosafranine series would be any more effective in man. During the clinical trials toxic action on the finger nails was observed.

R.T.L.

358—British Medical Journal.

- a. INNES, J. R. M. & SHOHO, C., 1952.—“Nematodes, nervous disease, and neurotropic virus infection. Observations in animal pathology of probable significance in medical neurology.” Year 1952, 2 (4780), 366–368.
- b. MCGREGOR, I. A., HAWKING, F. & SMITH, D. A., 1952.—“The control of filariasis with hetrazan. A field trial in a rural village (Keneba) in the Gambia.” Year 1952, 2 (4790), 908–911.
- c. ANON., 1952.—“Filariasis.” [Editorial.] Year 1952, 2 (4790), 926–927.
- d. WOODRUFF, A. W., 1952.—“Refresher course for general practitioners. Intestinal worms.” Year 1952, 2 (4791), 988–991.
- e. MORHOUSE, C. H., 1952.—“Intestinal worms.” [Correspondence.] Year 1952, 2 (4794), 1152.

(358a) Innes & Shoho review recent work on epizootic cerebrospinal nematodiasis in domestic animals, the migratory paths of helminths to the central nervous system of unnatural hosts, the role of nematode infection in facilitating virus invasion of the nervous system and the possibility of the occurrence in man of analogous cerebrospinal nematodiasis of animals. They find some indirect support for their ideas in Wilder's recent work on human endophthalmitis [for abstract see Helm. Abs., 19, No. 832a] in which the eyes of 46 children and adolescents in U.S.A. all showed some features of an eosinophilic or granulomatous lesion. In 24 eyes a larva was found on serial section. The changes were so uniform that in all the 46 cases a diagnosis of nematode endophthalmitis was made. It is suggested that these lesions are possibly only an extension in sequence and location of intracranio-vertebral nematodiasis and that helminths can enter the eye via the cranial cavity.

R.T.L.

(358b) In a survey of 603 out of the 710 inhabitants of the village of Keneba, in the west Kiang district of the Gambia, 220 were found infected with *Microfilaria bancrofti* and 203 with *M. perstans*. Hetrazan in five daily doses of 5 mg. base per kg. body-weight was administered to 181 villagers with *Mf. bancrofti* of whom 69 also had *Mf. perstans*. On re-examination ten months later 64% were free from *Mf. bancrofti* and there was an overall reduction of 94% for all the cases treated. Of those with *Mf. perstans*, 72% were negative and the reduction in total microfilariae of those treated was 92%. In untreated carriers of *Mf. perstans* the microfilariae had disappeared spontaneously in 32% but the total microfilarial count had increased by 49%. The drug was unpopular owing to its unpleasant side effects. This, and its high cost, seriously prejudice its use for mass treatment.

R.T.L.

(358d) As the title indicates, this is a summary giving succinctly the mode of infection, clinical symptoms and treatment of helminth parasites of man. It is limited to the commoner tapeworm and roundworm infections of the intestinal tract.

R.T.L.

(358e) Morhouse commenting on Woodruff's refresher course for general practitioners [see preceding abstract], suggests that when *Enterobius* is detected in a child, the whole family should be treated, even though they have no symptoms of infection. A 30 mg. dose of enteric coated gentian violet thrice daily for ten days is often effective in children if re-infection is prevented. Pork is rendered safe, even if heavily contaminated with *Trichinella* cysts, if kept in a deep freeze for 20 days at 5°F. (–15°C.) or for 24 hours at –0.4°F. (–18°C.).

R.T.L.

359—Bulletin Biologique de la France et de la Belgique.

- a. NIGON, V. & ROMAN, E., 1952.—“Le déterminisme du sexe et le développement cyclique de *Strongyloides ratti*.” 86 (4), 404-448.

(359a) Nigon & Roman review briefly the published work on the development of *Strongyloides* and describe and illustrate the morphology of the strain of *Strongyloides ratti* which they have studied. Free-living forms were cultured in faeces or on a gelose medium and contained a large proportion of filariform larvae. In faecal culture about 1.5% developed to sexual maturity with approximately equal numbers of each sex; on the gelose medium never more than 1% reached sexual maturity and almost all of these were males. All the parasitic forms were females which reproduced parthenogenetically, there being no chromosomal pairing and only a single maturation division. There were occasional anomalous divisions which led to doubling of the number of chromosomes or the loss of one element. The normal diploid number is 6. Free-living females had the full complement of chromosomes and reproduced by pseudogamy; the males appeared to have only five chromosomes and were derived from the intestinal females by the divisions in which one chromosome was lost. The authors conclude that sex is determined by a chromosomal mechanism, most if not all of the genetic males developing into free-living adults. The proportion of females developing into free-living adults appears to depend, however, on the medium in which they are cultured although other genetic factors exert some influence and explain the existence of diverse strains predominantly homogonic or heterogonic. S.W.

360—Bulletin Horticole. Liège.

- a. PIQUER, G., 1952.—“Le nématode ou anguillule du chrysanthème.” 70e Année, 7 (10), 291-296.

(360a) Piquer gives an account of the morphology and life-history of *Aphelenchoides ritzema-bosi* and the symptoms caused by it. He deals with the older methods of control by warm water and gives in detail the methods of control by sodium selenate and parathion as published in the literature. M.T.F.

361—Bulletin de l'Institut Français d'Afrique Noire.

- a. TUZET, O., MANIER, J. F. & VOGELI-ZUBER, M., 1952.—“Sur quelques parasites intestinaux de *Mardomius piceus* Attems 1952, Myriapode-Diplopode de Daloa (Côte d'Ivoire).” 14 (4), 1143-1151.

(361a) In this article, which is devoted to trichomycetes and ciliates, Tuzet *et al.* mention that nematodes which were found in the intestine of *Mardomius piceus* were described by Dollfus in *Ann. Parasit. hum. comp.*, 27, 143-236 as a new species, *Thelastoma pteroton* [for abstract see *Helm. Abs.*, 21, No. 58d]. P.M.B.

362—Bulletin Médical de l'Afrique Occidentale Française.

- a. JONCHÈRE, H. & PFISTER, R., 1952.—“Enquête sur la répartition de l'onchocercose en A.O.F.” 9 (1), 5-12.
 b. PFISTER, R., 1952.—“Répartition et fréquence des filarioses en Haute-Volta et en particulier dans la région de Bobo-Dioulasso.” 9 (1), 13-27.
 c. CAMAIN, R., VERNIER, J., NAVARRANNE, P. & AYITE, E., 1952.—“Schistosomiase cervico-vaginale à *S. haematobium*.” 9 (1), 81-84.
 d. SOHIER, H. M. L. & PARIS, P., 1952.—“Un cas autochtone de kyste hydatique du foie.” 9 (1), 123-125.

(362a) The population of the French West African colonies is about 17 millions. Of 1,387,019 persons examined, 4% were found to be infected with *Onchocerca volvulus*. The incidence varied enormously from village to village, ranging from 2% to 30% in villages less than 10-20 km. apart. Many of the cases are without symptoms. It is estimated that the number of *Onchocerca* cases is 100,000 in Upper Volta, 40,000 in French Sudan, 40,000 in French Guinea, 10,000 on the Ivory Coast and 10,000 in Dahomey. The principal endemic

centres lie in the valleys of the Volta and of the tributaries of the Niger. In Korosso, at the confluence of the Baoulé and the Bafing in the Bougouni district, the incidence reached 67%. It is estimated that ocular complications occur in 8%–10% of the infected persons. The population has evacuated some of the fertile valleys of the Volta and gold-mining areas of the Niger and Milo. The cost of tablets alone needed to treat the infected population is calculated at several hundred million francs.

R.T.L.

(362b) [An account of this work has already appeared in *Bull. Soc. Path. exot.*, 1952, 45, 92–102. For abstract see *Helm. Abs.*, 21, No. 7b.]

363—Bulletin et Mémoires de la Société Médicale des Hôpitaux de Paris.

- a. SIGUIER, F., FELD, PIETTE, M., WELTI, J. J. & LUMBROSO, P., 1952.—“Tribulations neurologiques d'un jeune berger atteint de distomatose cérébrale à *Dicrocoelium lanceolatum*.” 4e Série, 68 (9/1c), 353–359.

(363a) Siguiet *et al.* describe a case in France in which neurological manifestations were attributed at first to tubercular meningitis but later to intracranial invasion by *Dicrocoelium lanceolatum* [*dendriticum*]. The diagnosis was based on the presence of *D. dendriticum* eggs in the faeces, a positive intradermal reaction to distome antigen and an eosinophilia which reached 58%. The authors were unable to trace any other comparable case in the literature.

P.M.B.

364—Bulletin of the Ministry of Agriculture and Fisheries. London.

- a. ANON., 1952.—“Narcissus pests.” No. 51 (4th edit. revised by L. N. Staniland & D. C. Thomas), iv+36 pp.

(364a) This bulletin on pests of narcissus includes a section on *Ditylenchus dipsaci* in which its biology, the symptoms it produces, the extent of the damage it can do and some of its alternative host plants and weeds are described in detail. Another section deals with the control in the field and the precautions necessary to prevent its spread. A third section deals in considerable detail with the hot-water treatment of bulbs, mentioning the best type of apparatus, the duration of treatment, the best time to treat different bulbs, the after-treatment of bulbs, the frequency of treatment and the symptoms of injury which may be caused by treatment. There are short sections on two other nematode pests of narcissus, *Aphelenchoides subtemuis* and *Pratylenchus pratensis*.

J.B.G.

365—Bulletin. New York State Flower Growers Incorporated.

- a. FEDER, W. A., 1952.—“Systox for nematode in daffodils.” No. 82, pp. 3–4.

(365a) Feder gives the results of preliminary experiments using Systox as a drench and as a spray on growing daffodils visibly infested with stem and bulb eelworm. Systox was used at the rate of 20 gm. of 32% active material per gallon; this was sprayed on the plants once a week for three weeks or given as a drench of 100 ml. per plant three times at weekly intervals. Five days after treatment counts of nematodes were made in samples of leaf and bulb tissues separately. In both sprayed and drenched plants over 90% of the nematodes were found dead as compared with about 12% in controls. Further trials are being carried out in the field.

M.T.F.

366—Bulletin de la Société Française de Dermatologie et de Syphiligraphie.

- a. PHIPPS, F., 1952.—“Eruption de nature allergique due à la présence d'helminthes.” 59 (2), 145–147.

(366a) Phipps describes a case of severe, erythematous rash of more than nine months duration which had proved refractory to desensitization and other treatment, but which disappeared after a single course of anthelmintic treatment with santonin and thymol. Two *Ascaris* and one *Trichuris* were expelled.

S.W.

367—Bulletin de la Société de Pathologie Exotique.

- a. MAUZÉ, J., 1952.—“Larva migrans en Guadeloupe.” 45 (5), 612-614.
- b. BRYGOO, E. R. & AIGLE, G., 1952.—“Exemples de la périodicité nocturne de *Wuchereria bancrofti* au Sud-Vietnam.” 45 (5), 614-616. [Discussion p. 617.]
- c. PAYET, M. & CAMAIN, R., 1952.—“Pneumopathie aiguë à *S. haematobium*.” 45 (5), 680-687.
- d. BEYTOUT, 1952.—“Quelques notes sur la filariose de Bancroft.” 45 (5), 704.
- e. BURNOD, M., 1952.—“A propos d'un foyer isolé de bilharziose intestinale à Madagascar.” 45 (6), 744-746.
- f. TOULANT, P. & BOITHIAS, R., 1952.—“Le segment antérieur de l'oeil dans l'onchocercose.” 45 (6), 811-818.

(367a) In three cases of larva migrans in the foot which occurred among the white population of Guadeloupe, there was an eosinophilia of 26% to 32% but no hookworm ova were found. It is thought that the infection may have been due to larvae of *Ancylostoma caninum*. The lesions are illustrated by two photographs. P.M.B.

(367b) The rhythm of microfilariae of *Wuchereria bancrofti* in the peripheral blood of three men in Vietnam showed a marked maximum between the hours of 9.30 p.m. and 5.30 a.m. In a fourth subject, who alone had definite clinical manifestations of filariasis, only one of 54 samples contained a single microfilaria. In the discussion on this paper Galliard criticizes (i) the lack of detail given regarding the author's technique which consisted of the examination of three blood samples each of 20 cu. mm. from the finger every two hours during the 36 hours from 7.30 a.m. to 5.30 p.m. on the following day (a total of 54 samples per person) and (ii) the technique itself which he states from personal experience, makes comparison impossible. P.M.B.

(367c) Payet & Camain summarize the literature of pulmonary schistosomiasis and describe the clinical symptoms and the findings at autopsy in a case of acute pneumonopathy due to *Schistosoma haematobium* in an African. The specific lesions, which are illustrated by nine photomicrographs, were pseudo-miliary tubercles and broncho-pneumonic foci around a medium sized artery blocked by a dead adult schistosome. P.M.B.

(367d) In the province of Fianarantsoa in Madagascar, 40% of the inhabitants of the coast and 20% of the *Anopheles funestus* are infected with *Wuchereria bancrofti*. P.M.B.

(367e) Burnod reports the discovery of another isolated focus of schistosomiasis mansonii in Madagascar. It is situated around Andriba, in the north-west, equidistant from Mandritsara, the Ankaratra Mountains and the east coast, in the zone previously believed to be free from schistosomiasis and extends over a region of about 30 km. Of 216 persons examined by direct faeces examination, 15.7% were infected of which most were children without clinical signs of disease. At Andriba, 7% and at Ampisavankaratra, 60% of the *Biomphalaria* collected during October 1951 were infected with *Schistosoma mansonii*. The possible origins of this focus are discussed. S.W.

368—Bulletin de la Société Zoologique de France.

- a. ARVY, L., 1952.—“Présentation de documents relatifs à trois cercaires parasites de *Columbella rustica* L. (Gastéropode prosobranch).” 77 (2/3), 217-220.
- b. DELAVAUT, R., 1952.—“Recherches sur la gamétogenèse et la fécondation chez un nématode libre hermaphrodite.” [Demonstration.] 77 (2/3), 234.

(368a) [A fuller account of this paper appears in *Ann. Parasit. hum. comp.*, 1952, 27, 485-498. For abstract see No. 327a above.]

(368b) In this demonstration Delavault presented three slides of sections of *Rhabditis elegans*. The first showed that at the end of oogenesis the affinity of the cytoplasm for pyronin decreases and the second, that during spermatogenesis the distribution of ribonucleoproteins is not homogeneous as in oogenesis. The third slide showed the penetration of the ovum

by the spermatozoid when an intensely pyrinophilic zone appears round the male gamete. Delavault draws attention to the differences between the phenomena observed in *R. elegans* and those described in *Parascaris equorum* by other authors. S.W.

369—Bulletin of Zoological Nomenclature.

- a. McINTOSH, A., 1952.—“Proposed retention of the trivial name ‘*dentatus*’ Diesing, 1839 (as published in the combination ‘*Stephanurus dentatus*’) (Class Nematoda).” 9 (4/5), 141–142.
- b. LUCKER, J. M., 1952.—“On the problem relating to the name ‘*Stephanurus*’ Diesing, 1839 (Class Nematoda) raised by Dr. Ellsworth C. Dougherty.” 9 (4/5), 143.
- c. MANTER, H. W., 1952.—“On the trivial name to be used for the kidney worm of swine (Class Nematoda): comment on proposal submitted by Dr. Ellsworth C. Dougherty.” 9 (4/5), 143.
- d. DOLLFUS, R. P., 1952.—“Comment on the application submitted by Dr. Ellsworth C. Dougherty in regard to the trivial name ‘*dentatus*’ Diesing, 1839, as published in the combination ‘*Stephanurus dentatus*’ (Class Nematoda).” 9 (4/5), 144.

(369a) McIntosh believes that the suppression of *dentatus* as the trivial name of the kidney worm of swine would create endless confusion. He points out that the name *pinguicola* never appeared in combination with *Stephanurus* until proposed by Dougherty in 1951 and that the nodular worm (*Oesophagostomum dentatum*) and the kidney worm (*Stephanurus dentatus*) of swine have never been brought under the same genus. R.T.L.

(369b) Lucker recommends the retention of *Stephanurus dentatus* for the kidney worm of swine by the revoking of all provisions in the International Rules of Nomenclature which apply to so-called secondary homonymy. R.T.L.

(369c) Manter is of the opinion that the trivial name *dentatus* is so well established in the literature of parasitology and veterinary medicine that it should be validated. R.T.L.

(369d) Dollfus points out that as neither Diesing nor Rudolphi used, for the kidney worm of swine, the specific name *dentatus* in the same genus, there is no valid reason to change it. Only the incompetent could confuse *Stephanurus dentatus* with *Oesophagostomum dentatum*. R.T.L.

370—Canadian Field-Naturalist.

- a. LAWLER, G. H., 1952.—“A new North American host for the fish parasite *Triaenophorus nodulosus* (Pallas).” 66 (4), 111.

(370a) The plerocercoid of *Triaenophorus nodulosus* was found encysted in one out of 48 Miller’s Thumbs (*Cottus cognatus*) from Heming Lake, Manitoba. R.T.L.

371—Canadian Journal of Medical Sciences.

- a. COLLIER, H. B. & ALLENBY, G. M., 1952.—“Enzyme inhibition by derivatives of phenothiazine. IV. Inhibition of succinoxidase activity of rat-liver mitochondria.” 30 (6), 443–446.
- b. ROSS, W. M., 1952.—“A preliminary comparative study of test antigens prepared from adult and larval forms of *Trichinella spiralis*.” 30 (6), 534–542.
- c. ALLENBY, G. M. & COLLIER, H. B., 1952.—“Enzyme inhibition by derivatives of phenothiazine. V. Inhibition of rat-brain hexokinase by phenothiazone.” 30 (6), 549–551.

(371a) Collier & Allenby have examined the action of phenothiazine and its derivatives on the oxygen uptake of rat liver mitochondria in the presence of added succinate. Phenothiazine ($1.4 \times 10^{-5}M$), phenothiazine sulphoxide ($2.8 \times 10^{-5}M$) and phenothiazone ($5.4 \times 10^{-5}M$) caused 50% inhibition. Thionol had little activity. None of the compounds showed any effect on cytochrome oxidase activity with ascorbic acid as the substrate. W.P.R.

(371b) Ross prepared antigens from adult and larval *Trichinella spiralis* and compared their activity by means of the complement fixation test on serum of experimentally infected rabbits. The “adult” extract antigen had no apparent advantage over a “larval” antigen in the early detection of serum reactivity. W.P.R.

(371c) Allenby & Collier found that phenothiazone at a concentration of $7 \times 10^{-6}M$ caused a 50% inhibition of hexokinase activity in rat brain homogenates. Maximum inhibition was obtained after about one hour at room temperature. W.P.R.

372—Canadian Journal of Zoology.

- a. CHOQUETTE, L. P. E., 1952.—“*Dirofilaria desportesi* sp.nov., a filariid from the black bear in Canada.” 30 (6), 344–351.
- b. McCRAW, B. M., 1952.—“Observations on the development of *Lymnaea palustris* Müller.” 30 (6), 378–386.

(372a) *Dirofilaria desportesi* n.sp. from a North American black bear, *Euarctos a. americanus*, in Ontario and Quebec, differs from the known simian species in the caudal papillae especially of the post-anal group. The pre-anals are pedunculated with seven on one side and eight on the other. There are a pair of ad-anals and six pairs of post-anals: the five post-anal pairs are in single rows with a smaller sixth pair between the first pair. The size and ratio of the spicules and the number and arrangement of the caudal papillae in the males of 26 species of the genus are tabulated. There are five text figures. R.T.L.

(372b) Laboratory observations on the egg-laying habits, egg masses and embryos of *Limnaea palustris*, a probable vector of *Fascioloides magna*, are reported. The amount of dissolved oxygen and the temperature of the water are important factors in the number of embryos hatched and may influence the rate of egg production. No relation between the egg-laying and the percentage survival of embryos or between the number of ovipositions and the hatching interval was noted. R.T.L.

373—Cornell Extension Bulletin. New York State College of Agriculture.

- a. LEAR, B., 1952.—“Prevent the spread of golden nematode of potatoes. Disinfect burlap bags and machinery with methyl bromide.” No. 866, 4 pp.

(373a) [A fuller account of this paper has appeared in *Phytopathology*, 1952, 42, 489–492. For abstract see Helm. Abs., 21, No. 257t.]

374—Cornell Veterinarian.

- a. KRULL, W. H. & MAPES, C. R., 1952.—“Studies on the biology of *Dicrocoelium dendriticum* (Rudolphi, 1819) Looss, 1899 (Trematoda: Dicrocoeliidae), including its relation to the intermediate host, *Cionella lubrica* (Müller). VI. Observations on the life cycle and biology of *C. lubrica*.” 42 (4), 464–489.
- b. FORSYTH, R. A., 1952.—“The control and treatment of some common diseases of feedlot lambs.” 42 (4), 600–602.
- c. KRULL, W. H. & MAPES, C. R., 1952.—“Studies on the biology of *Dicrocoelium dendriticum* (Rudolphi, 1819) Looss, 1899 (Trematoda: Dicrocoeliidae), including its relation to the intermediate host, *Cionella lubrica* (Müller). VII. The second intermediate host of *Dicrocoelium dendriticum*.” 42 (4), 603–604.

(374a) Krull & Mapes describe in detail the morphology of *Cionella lubrica* (the first intermediate host of *Dicrocoelium dendriticum*) occurring in the New York area and compare it with published descriptions. They have studied the habits, life-history and natural habitat of the snails and the effect of various changes in the environment. Other parasites found to occur naturally in this species were *Muellerius minutissimus* and *Panopisthus pricei*. Temperatures ranging from 40°F. to room temperature proved favourable for maintaining the snails in the laboratory but above 80°F. was not tolerable. S.W.

(374b) In this brief account of diseases of sheep, Forsyth mentions Dictyocaulus infection as a complication of shipping pneumonia and is of the opinion that treatment of the lungworm infection is of doubtful value. Against the common intestinal nematodes, phenothiazine is the drug of choice. S.W.

(374c) Krull & Mapes observed ants (*Formica fusca*) taking slimeballs containing cercariae of *Dicrocoelium dendriticum* into their colony. Subsequent examination showed

metacercariae encysted in the abdomen, the number of cysts per ant varying from 6 to 103. On a naturally contaminated pasture, the incidence in ants reached 35%. By feeding experiments with sheep it was shown that the ants act as second intermediate hosts for *D. dendriticum*.

S.W.

375—Dermatologica. Basle.

- a. BURCKHARDT, W., HAEMMERLI, U. & MEIER, P., 1952.—“Badedermatitis durch Cercarien am Zürichsee.” 104 (4/5), 237.

(375a) The dermatitis which is of frequent occurrence among bathers in the Lake of Zürich from June to September has been shown by Burckhardt *et al.* to be caused by cercariae [unnamed] which escape from *Limnaea ovata*. This brief preliminary note will be followed by a full account to be published elsewhere.

A.E.F.

376—Deutsche Landwirtschaft.

- a. NOLTE, H. W., 1952.—“Nematodenschäden und ihre Ursachen.” 3 (10), 531–534.

(376a) Nolte has compared the effects of the expressed sap of healthy rye plants with that of stem nematode-infested rye on the growth of decapitated sunflower seedlings, and found an increased growth rate with the latter as compared with the former and with distilled water. A similar increase in growth rate occurred when he used crushed stem eelworms extracted from chopped rye plants. He concludes that a material is produced by the nematodes in the plants causing histological changes. Other experiments were carried out with sugar-beet and rape plants infested with *Heterodera schachtii*, barley and *Primula malacoides* infested with *Pratylenchus pratensis*, and rye infested with *Ditylenchus dipsaci*. Leaves of the same species were placed in several dilutions of the expressed sap of these plants. After a few hours characteristic curling, wilting and discoloration had taken place which was absent from leaves in sap from healthy plants. Fungi in some of the test plants caused effects which could be distinguished from those due to nematodes. The source of the damaging substance and its chemistry are not known. Nolte concludes that the causes of damage to nematode-infested plants are a combination of mechanical damage, disturbances in translocation of nutrients, removal of food materials by the nematodes and, of chief importance, the production of poisonous damaging substances.

M.T.F.

377—Deutsche Tierärztliche Wochenschrift.

- a. WETZEL, R., 1952.—“Das Blutbild eines Ponyfohlens nach künstlicher Ansteckung mit *Strongylus edentatus*.” 59 (41/42), 322–323.

(377a) Wetzel has studied the blood picture of an eight-months-old pony foal which had been given 250 infective *Strongylus edentatus* larvae. Examination of the blood was carried out twice weekly (later once a week) over a period of 57 weeks, commencing two weeks before infection. Up to the end of the prepatent period there was a progressive reduction of the red cell count (from nine to six million) and a parallel decrease in the haemoglobin value. The leucocyte count was generally slightly above normal with maximum values between 12,000 and 13,000. Eosinophilia increased from 3% to 29% up to the end of the fourth week, after which there was a gradual decrease. After the prepatent period the red blood count improved while the leucocyte count remained slightly high: eosinophilia varied between 3% and 8%. The pathogenesis of the blood picture is briefly discussed.

A.E.F.

378—Diseases of the Nervous System.

- a. HELFAND, M., HOUCK, K. H. & WEISSMAN, F. M., 1952.—“Trichinosis as a cause of encephalitis. (Case report and review of the literature).” 13 (8), 242–246.

(378a) *Trichinella spiralis* has no predilection for any part of the central nervous system and may give rise to symptoms resembling those of encephalomyelitis, polyneuritis, acute

anterior poliomyelitis, meningitis, dermatomyositis, periarteritis nodosa and even psychosis. This is illustrated by the clinical history, neurological examination and pathological report of a case seen in New York.

R.T.L.

379—Documenta de Medicina Geographica et Tropica. Amsterdam.

- a. HOEVEN, J. A. VAN DER, 1952.—“Some remarks on filariasis, in relation to the administration of ‘hetrazan.’” 4 (2), 107–111.
- b. MANSON-BAHR, P., 1952.—“The clinical manifestations and ecology of Pacific filariasis.” 4 (3), 193–204.
- c. BERG, J. A. G. TEN, 1952.—“Filariasis loa; treatment with hetrazan.” 4 (3), 209–218.

(379a) In the coastal region of Inanwatan in New Guinea the infection of adults with *Microfilaria bancrofti* averaged 25%, ranging from 5.7% in Konda to 40% in Arandai. In the Sarmi district the average was 36%, varying from 7% in Demta to 56% in Massip. The highest incidence in schoolchildren was 40% which occurred in Martewar. Twelve patients received a short course of treatment with hetrazan: two tablets of 50 mg. were given thrice daily for 10 days and the microfilarial periodicity was followed. The number of microfilariae, eosinophils and leucocytes in 20 cu. mm. of blood and the clinical findings are tabulated. All microfilariae were killed in a few days but two months later there were many relapses. The dose had not killed the adult parasites. Van der Hoeven remarks that a single examination of the blood is quite insufficient and that at least 5 to 10 examinations over a period of some months must be made before the patient can be pronounced negative. Incipient swellings and elephantiasis decreased during a 10-day course of treatment but more advanced stages did not benefit.

R.T.L.

(379b) Manson-Bahr summarizes the facts and arguments for the separation of *Wuchereria pacifica*, which gives rise to non-periodic embryos, from *W. bancrofti*, of which the embryos have a nocturnal periodicity, in Melanesia. The mosquito vectors and the clinical symptoms are different. *W. bancrofti* is urban and a house infection. *W. pacifica* is a rural infection contracted in gardens and plantations from day-biting mosquitoes. Elephantiasis is essentially related to blocking of the lymphatic filter and its situation in the body. The location of the adult worms depends on the point of entry through the skin and, in turn, on the biting habits of the vector and on the parts exposed. The lesions depend on the exact location of the adults and the extent of the lymphatic damage involved. The clinical phenomena depend on the number of adult worms and the time over which they are acquired and the characteristics of the elephantiasis which results can be explained by the preferential location of each species in the lymphatic system.

R.T.L.

(379c) From observations on eight missionaries, Ten Berg confirms that *Loa loa* reacts quickly to hetrazan. *Acanthocheilonema perstans* does not. Clinical notes on seven of the patients are given. He believes that *Loa loa* has an unfavourable influence on the general condition of some of the patients. Two photomicrographs of liver punctate show eosinophilic micro-abscesses with, possibly, remnants of microfilariae and suggest that the embryos were probably killed in the liver during treatment.

R.T.L.

380—Dokladi Akademii Nauk SSSR.

- a. BIKHOVSKAYA-PAVLOVSKAYA, I. E., 1952.—[Bird trematodes in western Siberia and their dynamics.] 84 (3), 649–651. [In Russian.]
- b. BAUER, O. N. & NIKOLSKAYA, N. P., 1952.—[New data on intermediate hosts of parasites of *Coregonus lavaretus ladogae*.] 84 (5), 1109–1111. [In Russian.]

(380a) From an analysis of the trematodes of various birds of western Siberia the author finds that the type of food and the migration of birds are of paramount importance in the composition of the trematode fauna.

C.R.

(380b) In *Coregonus lavaretus ladogae* of up to two years of age the authors found *Proteocephalus exiguus* occurring commonly. Nearly 100% of older fish were infected with *Echinorhynchus salmonis* and *Cystidicola farionis* and in some fish *Cyathocephalus truncatus* were found. This fish feeds mainly on the crustaceans Pontoporeia, some Pallasea and, very rarely, on Gammaracanthus. The authors examined 1,248 specimens of *Pontoporeia affinis*, of which one was infected with larvae of *Cystidicola farionis* and one with larvae of *E. salmonis*. Out of 214 specimens of *Pallasea quadrispinosa* three were infected with larvae of *E. salmonis* and one with *Cyathocephalus truncatus*. Seventy-five specimens of *Gammaracanthus loricatus* var. *lacustris* were free from parasites.

C.R.

381—Doriana. Genoa. [Supplement to Annali del Museo Civico di Storia Naturale "G. Doria".]

- a. BRIAN, A., 1952.—"Di un raro cestode trovato nei muscoli del pesce *Brama rayi* Schneid. proveniente dal mercato di Genova (*Gymnorhynchus gigas* Cuvier)." 1 (25), 7 pp.

(381a) Brian describes and figures from the muscles of *Brama rayi* the plerocercoid of *Gymnorhynchus gigas*.

R.T.L.

382—East African Medical Journal.

- a. BARTON, W. L., 1952.—"The treatment of urinary bilharzia." 29 (4), 144-147.

(382a) Of 1,270 admissions to Kilifi Hospital, Coast Province, Kenya, 23% had urinary bilharziasis. The technique of intensive treatment advocated by Alves & Blair was followed in 100 cases and resulted after two days in an apparent cure in 62%. The necessity of strict rest during the days of treatment and on the day following is emphasized. The toxic reactions were few and the patients preferred this intensive treatment to the older, long-drawn-out method previously used.

R.T.L.

383—Empire Journal of Experimental Agriculture.

- a. DAULTON, R. A. C. & STOKES, W. M., 1952.—"The destruction or inhibition of root-knot nematodes by exposure to an electrostatic field." 20 (80), 271-273.

(383a) A pulsating electrostatic field set up by a simple induction coil across suitably spaced electrodes destroyed *Heterodera marioni* in dry or damp soil and in water. The frequency of interruptions of the electrostatic field appears to have a direct relation to its destructive effect. The lethal area is mainly, but not exclusively, between the electrodes. A comparatively small voltage is required to kill larvae but this has to be increased for other stages in the life-cycle. Fertilized females are the most resistant. A prototype mobile unit is described which gave a frequency of interruption of the electrostatic field of 150 to 700 per second. When mounted on a tractor travelling at four miles per hour, there was a negligible loss of efficiency, little mechanical strain on the electrodes and no appreciable draught on the tractor. The treatment had no obvious detrimental effects on growing plants.

R.T.L.

384—Ergebnisse der Wissenschaftlichen Untersuchung des Schweizerischen Nationalparks.

- a. ALTHERR, E., 1952.—"Les nématodes du Parc National Suisse. (Nématodes libres du sol.) 2e partie." 3 (26), 315-356.

(384a) Altherr reports on the free-living nematodes found in samples of soil and humus etc. collected at a number of different sites on the Plan-Posa hill in the Swiss National Park. Details are given, for each site, of its chief physical features, height, location, vegetable covering, soil reaction and microclimate, and the different nematodes found are named and enumerated. In the systematic section brief notes are provided on the many species found, amongst which the following forms new to science are described and figured: *Dorylaimus carteri* subsp., *brevis* n.subsp., *D. (Aporcelaimus?) nivalis* n.sp., *D. paraconfusus* n.sp., *D. modestus* n.sp.,

D. pseudoagilis n.sp., *D. beaumonti* n.sp., *D. subacutus* n.sp., *Heterodorus magnificus* n.g., n.sp., *Enchodelus vestibulifer* n.sp., *E. rhaeticus* n.sp., *Nygalaimus plan-posae* n.sp., *Achromadora ruricola* subsp. *macroprocta* n.subsp., *A. inermis* n.sp., *A. semiarmata* n.sp., *Prodesmodora terricola* n.sp., *Tylenchus aberrans* n.sp.

T.G.

385—Experimental Parasitology. New York.

- a. DAUGHERTY, J. W., 1952.—“Intermediary protein metabolism in helminths. I. Transaminase reactions in *Fasciola hepatica*.” 1 (4), 331–338.
- b. READ, C. P., 1952.—“Contributions to cestode enzymology. I. The cytochrome system and succinic dehydrogenase in *Hymenolepis diminuta*.” 1 (4), 353–362.
- c. WEINSTEIN, P. P., 1952.—“Regulation of water balance as a function of the excretory system of the filariform larvae of *Nippostrongylus muris* and *Ancylostoma caninum*.” 1 (4), 363–376.
- d. SOO-HOO, G., 1952.—“Effect of an arsenoso compound on experimental *Trichinella spiralis* in mice.” 1 (4), 377–383.
- e. THOMPSON, P. E. & REINERTSON, J. W., 1952.—“Chemotherapeutic studies of natural pinworm infections in mice.” 1 (4), 384–391.

(385a) Daugherty has examined the transaminase activity of homogenates of whole *Fasciola hepatica* in Krebs-Ringer phosphate. α -ketoglutaric acid was used as acceptor; glutamic acid was estimated photometrically in solution after separation by paper chromatography. High transaminase was obtained with aspartic acid, isoleucine, leucine and valine. Arginine, alanine, phenylalanine, tyrosine, methionine and proline gave moderate to weak results. Lysine and cystine produced weak activity, Tryptophan gave variable weak activity. Transaminase activity with valine, alanine, phenylalanine, methionine and proline was increased in the presence of added pyridoxal phosphate. W.P.R.

(385b) Read has demonstrated the presence of cytochrome oxidase in homogenates of *Hymenolepis diminuta* which showed an increased oxygen uptake after the addition of cytochrome *c*. Succinic dehydrogenase activity was inhibited by malonate. Some evidence for the existence of the labile intermediate step between succinic dehydrogenase and cytochrome oxidase, which has been reported to occur in mammalian heart muscle preparations, was obtained from experiments with aged tapeworm homogenates. W.P.R.

(385c) Weinstein found that the pulsation rate of the excretory ampullae of filariform larvae of *Nippostrongylus muris* and *Ancylostoma caninum* varied inversely with the sodium chloride concentration in the environment. With *N. muris* in sucrose solutions, pulsation rate was also dependent upon the solute concentration except over a certain range. The author concludes that the excretory system of these larvae is concerned in the regulation of water balance. W.P.R.

(385d) A single dose of a new arsenical compound, *N*-(*p*-arsenoso-benzyl)glycine amide hydrochloride, if given at the rate of 500 mg. per kg. body-weight to mice shortly after the administration of 2,000 *Trichinella spiralis* larvae, prevented death from trichinosis in 64% of the animals during the subsequent ten weeks. Longer intervals or smaller doses reduced the drug's effectiveness. R.T.L.

(385e) The oxyurids, *Syphacia obvelata* and *Aspicularis tetraptera*, which commonly infect colonies of white mice, provide useful material for screening chemotherapeutic substances. Against both species gentian violet, phenothiazine, hexylresorcinol, tetrachlorethylene and carbon tetrachloride were effective but thymol, santonin, *p*-benzylphenylcarbamate were ineffective. R.T.L.

386—FAO Food and Agricultural Legislation. Rome.

- a. ANON., 1952.—“Netherlands. Decree relative to measures to combat golden nematode.—24 May 1952.” 1 (2), (III.3/52.1), 3 pp.

(386a) Decree No. 288 of the Netherlands Government, containing amendments to the regulations relative to measures to combat golden nematode and superseding the Act on

measures to combat golden nematode with the short title "Decree relative to measures to combat golden nematode—24 May 1952", was published on 13 June 1952 as *Staatsblad van het Koninkrijk der Nederlanden*. It forbids the growing of potatoes or other designated plants if they favour the multiplication of the golden nematode on ground upon which such plants have been situated within the two calendar years preceding the proposed time of cultivation. Order No. P.A. 3,900 published as *Nederlandse Staatscourant*, No. 144, 28 July 1952, designated as plants liable to favour multiplication of the golden nematode, tomato, flower bulbs and tubers, arboricultural products, kohlrabi and cabbage plants, beets and similar material intended for propagation, distributed with earth attached thereto. Sanction may be granted to grow potatoes in the second year thereafter following on land from which potatoes have been lifted before 20 June of a given year. Order No. P.A. 3,1020 published as *Nederlandse Staatscourant*, No. 178, 12 September 1952, extends this permission to tomatoes under the same conditions.

R.T.L.

387—FAO Plant Protection Bulletin. Rome.

- a. LINFORD, M. B., 1952.—"Pineapple diseases and pests in Mexico." 1 (2), 21-25.
- b. ANON., 1952.—"Plant quarantine announcements." 1 (3), 45-46.

(387a) In Mexico, pineapple roots are remarkably extensive and healthy, save in the Loma Bonita area where *Heterodera marioni* is already widely established in the pineapple fields, both on the roots of pineapples and of weeds. Unidentified species of *Pratylenchus* and *Rotylenchus* which were frequently obtained from pineapple roots may cause serious disease if pineapple cultivation becomes intensive.

R.T.L.

(387b) The importation into Algeria of seedlings, cuttings, scions and all parts of plants other than fruits of the Rutaceae family is prohibited by the Order of 21 June, 1951 published in the *Journal Officiel de l'Algérie*, No. 52, 27 June, 1952. The importation into Canada from Europe of (i) plants with soil, sand, soil or earth, or packing material containing soil except from Holland and Belgium and (ii) plants of *Salix*, is prohibited by Order in Council P.C. 3811 of 21 August, 1952. Importation into Hungary of (i) plants, living parts thereof and plant products if not sealed, not accompanied by phytosanitary certificates, or with adhering earth or clods, (ii) soil, stable manure and compost, and (iii) potatoes, unless accompanied by a certificate establishing that the shipment or the growing area is free from *Heterodera rostochiensis* or by a certificate of disinfection, is prohibited.

R.T.L.

388—Farming in South Africa.

- a. VILLIERS, O. T. DE, 1952.—"Animal diseases dangerous to man." 27 (319), 465-466.
- b. ALEXANDER, R. A., 1952.—"Safeguarding the Union's livestock industry." [Report of the Division of Veterinary Services for the year ended 31 August, 1952.] 27 (321), 548-563.
- c. NAUDE, T. J., 1952.—"Entomological services and research." [Report of the Division of Entomology for the year ended 31 August, 1952.] 27 (321), 616-621.

(388a) In this popular article Villiers stresses the importance of adequate provision of sanitation for native employees on South African farms and the danger of infection with hydatid from the ingestion of vegetables, especially lettuce, contaminated by dog faeces. R.T.L.

(388b) Local *Physopsis* were not easily infected with *Schistosoma* sp. Snails collected from other localities became infected in natural surroundings but those bred from them showed a high degree of resistance against experimental infection. The efficacy of copper sulphate rapidly diminished in the presence of organic substances in large quantities in a dam, and even at the rate of 1:1,000 parts of water in the dam, was neutralized in 24 hours. Local amphistomes hitherto identified as *Paramphistomum cervi* and *P. explanatum* have been found to be *P. microbothrium* and *P. calicophoron*. All attempts to infect *Limnaea natalensis* and *Planorbis pfeifferi* failed, but *Bulinus tropicus* was experimentally infected with miracidia of *P. microbothrium*.

R.T.L.

(388c) Six different concentrations of Dowfume and D-D for the control of eelworms in tobacco fields were used in extensive field tests both on irrigated and dry land at Potgietersrust and showed improvement over the controls. A wide range of economic plants was tested for susceptibility. The Crotalariae were the most promising as far as resistance is concerned. Many of the Gramineae harboured the pest to a considerable extent although they did not suffer heavily but the grass *Panicum maximum* appeared to be completely immune. A small-scale survey resulted in the following finds: *Tripyla* sp., *Trilobus* sp., *Cephalobus* sp., *Dorylaimus* sp., *Xiphinema* sp., *Ironus* sp., *Pratylenchus* sp., many kinds of Tylenchidae, *Criconemoides* sp. (which may prove of importance to the fruit industry), *Mononchus* sp. and *Parabrachyurus* sp. *Pratylenchus scribneri* which causes unsightliness of the skin was detected on high veld potatoes.

R.T.L.

389—Feuille des Naturalistes. Paris.

- a. DOLLFUS, R. P., 1952.—“Nécessité de connaître les changements de forme des crochets au cours de l'ontogénèse pour identifier les jeunes *Cysticercus fasciolaris* Rudolphi 1808.” 7 (7/8), 63–69.

(389a) Dollfus describes and illustrates the development of the hooks in *Cysticercus fasciolaris* from the undifferentiated cysticercus to the “Strobilocercus”, in order to simplify its identification by workers other than helminthologists. Earlier work by various authors is reviewed in a series of footnotes and there is a list of 21 references.

S.W.

390—Field and Laboratory. Dallas, Texas.

- a. COUCH, Jr., A. B., 1952.—“Blood parasites of some common Texas birds.” 20 (4), 146–154.

(390a) This is a report on the results of a survey of protozoal infections in 434 Texas birds belonging to 17 different species, but the occurrence of [unidentified] microfilariae in the blue jay (*Cyanocitta c. cristata*), the eastern lark sparrow (*Chonestes g. grammacus*), the mourning dove (*Zenaidura macroura carolinensis*) and the orchard oriole (*Icterus spurius*) is recorded in one of the tables.

R.T.L.

391—Folia Clinica et Biologica.

- a. COUTINHO, J. O., 1952.—“Contribuição para o estudo da esquistossomose mansônica na República Dominicana.” 18 (1), 57–73.

(391a) *Schistosoma mansoni* is again reported from the Dominican Republic. At Hato-Mayor 15% of 653 individuals and at Las Palmillas 4.6% of 65 individuals were infected. The vectors were *Australorbis glabratus* and *Australorbis* sp. *S. mansoni* cercariae were found in 3 out of 153 specimens of *A. glabratus*. A map of the town of Hato-Mayor shows the incidence of cases in the various streets.

R.T.L.

392—Fruits d'Outre Mer. Paris.

- a. CLÉMENT, P., 1952.—“Les nématodes nuisibles aux cultures fruitières tropicales.” 7 (9), 424–435.

(392a) This is a popular review of the plant-parasitic nematodes which might be found damaging crops in the tropics, their possible economic importance and some control measures.

M.T.F.

393—Gesunde Pflanzen. Frankfurt.

- a. GOFFART, H., 1952.—“Vierzig Jahre Kartoffelnematodenbekämpfung in Deutschland.” 4 (10), 261–264.

(393a) This is a short popular review of the importance of *Heterodera rostochiensis* and its control in Germany during the 40 years since its discovery at Rostock in 1912.

M.T.F.

394—Grower. London.

- a. BOURN, N., 1952.—“Killing chrysanthemum eelworms in five minutes.” 38 (23), 1148–1149.

(394a) This is an illustrated account of a demonstration given by Staniland of his method of treating chrysanthemum stools in water at 115°F. for five minutes for the control of eelworm.

M.T.F.

395—Hemera Zoa. Buitenzorg.

- a. KRANEVELD, F. C. & DJAENOEDIN, R., 1952.—“Enige zware gevallen van infectie met *Spirocerca lupi* (*Strongylus lupi*, *Spiroptera*, *Spirocerca*, *Filaria sanguinolenta*).” 59 (1/2), 101–102.

(395a) Kraneveld & Djaenoedin, continuing their report on the survey of the distribution of the most interesting helminths in Indonesia, report that 40–50% of the dogs slaughtered at the Balige abattoir were infected with *Spirocerca lupi*. The infection was encountered only in dogs from the east coast and not in those from the Batak areas. Usually there was a single lesion situated in the posterior quarter of the oesophagus, but occasionally two, and once three, lesions were observed. The size of the nodules varied from that of a large pea to that of an average sized pigeon's egg. The number of worms per nodule varied considerably. The maximum number was 36. Some cases had small nodules, each containing a single worm, in the wall of the thoracic portion of the aorta.

P.L.L.R.

396—Hirosaki Medical Journal.

- a. AKIMOTO, T., HASHIMOTO, T. & KUBO, S., 1952.—[The relation between the parasitization of *Ascaris lumbricoides* and abdominal pain in villages of the Hirosaki district. (Report 1.) The results of mass examination of eggs in feces.] 3 (1), 3–6. [In Japanese: English summary p.*2.]
- b. AKIMOTO, T., FUKUSHIMA, T., YASUDA, M., MARUYAMA, M. & TSURUTA, K., 1952.—[The relation between the parasitization of *Ascaris lumbricoides* and abdominal pain in villages of the Hirosaki district. (Report 2.) Vomiting and excretion of the *Ascaris lumbricoides*.] 3 (1), 7–10. [In Japanese: English summary p.*3.]
- c. AKIMOTO, T., SATO, K., ATSUMI, T. & ASAKURA, S., 1952.—[The relation between the parasitization of *Ascaris lumbricoides* and abdominal pain in villages of the Hirosaki district. (Report 3.) Studies of the patients complaining of abdominal pain.] 3 (1), 11–13. [In Japanese: English summary p.*4.]
- d. AKIMOTO, T. & NARUMI, H., 1952.—[The relation between the parasitization of *Ascaris lumbricoides* and abdominal pain in villages of the Hirosaki district. (Report 4.) Studies on patients complaining of epigastric colicky pain.] 3 (1), 73–75. [In Japanese: English summary p.*19.]
- e. ITO, F. & YASUDA, S., 1952.—[Case report: cysticercosis hominis.] 3 (1), 76–78. [In Japanese: English summary p.*20.]

(396a) The incidence of *Ascaris* eggs in faeces was 79% at Tateoka and 75.1% at Shimizu, two villages near Hirosaki in Japan. There were many positive cases in breast-feeding infants. In children the incidence increased rapidly up to 6–8 years. Although *Ascaris* eggs were more frequently found in persons complaining of abdominal pain than in those without these symptoms, no difference could be detected statistically.

R.T.L.

(396e) Four years after repatriation from North China, a Japanese developed multiple subcutaneous masses and subsequently he had epileptiform seizures. 77 of the masses were excised and diagnosed as *Cysticercus cellulosae*.

R.T.L.

397—Höfchen-Briefe für Wissenschaft und Praxis.

- a. SACHS, H., 1952.—“Neues zur Älchenbekämpfung mit E 605 forte.” 5 (1), 20–32. [Also in English edition.]

(397a) Sachs gives the results of immersing *Aphelenchoides olesistus* [= *fragariae*] and *A. ritzeana-bosi* in solutions of E 605 forte at concentrations of 0.05% to 0.017% for one to three days. A complete kill of *A. olesistus* was effected 8–18 days after treatment and of

A. ritzema-bosi 14–23 days after, depending on concentration and duration of immersion. For lasting disinfection of plants he recommends spraying with E 605 forte at a concentration of 0.01% to 0.05% four to six times at intervals of 2–3 days. Some *A. ritzema-bosi* were capable of infesting a chrysanthemum leaf after immersion in 0.05% solution for one day, but not after longer immersion. With concentrations of 0.005% and less the initial paralysis is followed by a degree of recovery depending on the duration of treatment and the concentration. Because of the rapid paralysing effect of E 605 forte it is deduced that there is an acetyl choline – choline esterase mechanism in the nervous system of the nematodes. M.T.F.

398—Hoppe-Seyler's Zeitschrift für Physiologische Chemie.

- a. ČMELIK, S., 1952.—“Zur Kenntnis der Lipide aus den Cystenmembranen von *Taenia echinococcus*.” 289 (2/3), 78–79.

(398a) Čmelik has examined the lipids in the germinal membrane of cysts of *Echinococcus* from pigs' livers. The unsaponifiable fraction consisted largely of cholesterol. Other sterols were not detected. Of the fatty acids found about 50% was water-insoluble; of this, one-third was solid at room temperature, and two-thirds liquid. The liquid part was probably largely oleic acid. W.P.R.

399—Hospital. Rio de Janeiro.

- a. COUTINHO, J. O., CROCE, J., CAMPOS, R. & AMATO NETO, V., 1952.—“Contribuição para o estudo do diagnóstico de laboratório da estrogiloidose (*Strongyloides stercoralis*).” 41 (1), 11–20.
- b. SANCHES, A., 1952.—“Diagnóstico de parasitas intestinais: estudo comparativo entre os processos de Faust e col., da sedimentação e de Ferreira e Abreu.” 41 (3), 381–389. [English summary pp. 387–388.]
- c. MOLLER MEIRELLES, M., 1952.—“Helmintíases no exército.” 41 (5), 705–713.
- d. AMARAL, A. D. F. & AVILA PIRES, C. D. DE, 1952.—“Sobre um caso autóctone de esquistossomose mansônica do interior de Estado de S. Paulo. (Nota prévia.)” 41 (6), 869–873.
- e. FRANCA, O. H. DA, 1952.—“Alergia nas helmintíases.” 42 (1), 51–55. [English summary p. 55.]
- f. LOBO, M. B., MOREIRA, M. & OLIVEIRA, J. E. DE, 1952.—“Resultado do exame parasitológico (helmintos e protozoários) de 10,019 amostras de fezes pela técnica de Faust.” 42 (2), 145–152. [English summary p. 151.]
- g. COUTINHO, J. O., CROCE, J., CAMPOS, R. & AMATO NETO, V., 1952.—“Resultados obtidos com o emprego da dietilcarbamazina (hetrazan) no tratamento da estrogiloidose.” 42 (3), 339–343. [English summary p. 343.]
- h. LOURES, J. DE C. & BASTOS, A. F., 1952.—“Resultado e considerações sobre 250 exames de fezes (parasitológico e bacteriológico).” 42 (4), 507–522. [English summary pp. 520–521.]
- i. FIGUEIRÊDO, A. DE, 1952.—“Diagnóstico da Bancroftose.” 42 (4), 523–528.

(399a) By testing five methods for the recovery of larvae of *Strongyloides stercoralis* from faeces, Coutinho *et al.* conclude that examination by Baermann's technique, repeated on three consecutive days if necessary, is the most satisfactory. This method gave positive results in 122 out of 129 known cases (94.6%); it is considered to be preferable to the examination of duodenal fluid. P.M.B.

(399b) In the faeces of 100 patients helminth infections were revealed in 40% by the Faust technique, in 38% by the sedimentation technique and in 81% by the Ferreira & Abreu's modification of Faust's technique which was described by Silva Jr. in 1948 in his thesis “Contribuição à profilaxia das helmintoses do homem no Brasil”. In the tabulated incidences of individual species, it is noteworthy that the incidence of *Meloidogyne* sp. was 17% by the Ferreira & Abreu method. R.T.L.

(399c) Helminths occurred in 1,563 out of 1,868 (83.7%) apparently healthy soldiers of the Brazilian army examined during the period March 1947 to December 1949. *Necator americanus* was found in 978, *Ascaris* in 726, *Trichuris* in 545, *Strongyloides* in 246, *Schistosoma mansoni* in 22, *Hymenolepis nana* in three and *Taenia saginata* in one. P.M.B.

(399d) Amaral & Avila Pires describe the first known autochthonous case of schistosomiasis mansoni from the interior plateau of the State of São Paulo. P.M.B.

(399e) Of 150 allergic patients, 47 had helminthiasis. Eight patients with skin diseases which were undoubtedly of helminthic aetiology were cured by anthelmintic therapy. R.T.L.

(399f) Samples of faeces of 10,019 civil servants, covered by the insurance scheme of the I.P.A.S.E., in the Federal District were examined by Faust's technique. The helminth incidence was *Trichuris trichiura* 29.7%, *Ascaris lumbricoides* 17.1% and hookworm 10%. R.T.L.

(399g) Ten cases of strongyloidiasis were treated with hetrazan but examination of the faeces by the Baermann technique showed that the infection still persisted in all of them. R.T.L.

(399i) Figueirêdo gives an account of the various methods which have been used for the diagnosis of filariasis bancrofti. Preliminary tests on three patients with elephantiasis, only one of whom had microfilariae in the peripheral blood, suggest that antigen prepared from *Setaria equina* may be of use in diagnosing filariasis bancrofti. P.M.B.

400—Hygiène et Médecine Scolaires. Paris.

- a. COUTELEN, F., GERVOIS, M., COCHET, G., BIGUET, J. & MULLET, S., 1952.—“Le parasitisme intestinal chez les enfants d'âge scolaire. Étude médico-sociale.” 5 (2), 69–76.

(400a) Single examinations of 7,175 children two to six years of age, in the infant schools in Lille and its suburbs, have shown that the helminth incidence in 1948–1951 averaged: *Ascaris* 1.8%, *Oxyuris* 41.4% and *Trichuris* 5.7%. At the infant surgical and orthopaedic clinic of the Hôpital Saint-Sauveur, Lille, 88% of 250 children from one to 15 years old had parasites. The increase in incidence with age was: *Ascaris* 20%, *Trichuris* 42.9% and *Oxyuris* 64.5%. Graham's tape technique revealed anal *Oxyuris* infection in 77.5% of the young girls. In the children's medical clinic of the Hôpital Saint-Sauveur, 60.6% of 160 children had intestinal parasites. At the A. Calmette sanatorium at Camiers (Pas-de-Calais), 100 children from one to 19 years old were examined three or four times; 98% were infected and in the eldest the incidence was: *Ascaris* 44%, *Oxyuris* 75% and *Trichuris* 80%. At the Institut Médico-Pédagogique d'Armentières (Nord) search was made for *Oxyuris* only. Three or four examinations gave an incidence of 94.7% in 282 children between the ages of six and fourteen. At the maternity and child clinic of Linselles (Nord), examination of 113 infants aged 1½ to six years gave an incidence of 36.55% with whipworm and 33% with *Oxyuris*. The results are of interest not only on account of their immediate clinical significance but also for the light they throw on the general hygienic conditions of the infant population in France. R.T.L.

401—Idia. Buenos Aires.

- a. VEGA, J., 1952.—“Protección vitícola contra la 'anguilulosis'.” 5 (53), 35–37.

(401a) Root-knot disease of vines, caused by *Meloidogyne incognita*, occurs in a good proportion of the grape-growing districts of the provinces of Mendoza and San Juan, Argentina. The author tested a number of stocks for susceptibility to attack. Numbers 261/50 and 16–16 showed no lesions: 8 stocks were classified as somewhat resistant, 8 as susceptible and 11 as very susceptible. M.T.F.

402—Igaku Kenkyuu. Kyushu University.

- a. MIYAZAKI, I. & ISHII, Y., 1952.—[On a gnathostome larva encysted in the muscle of a salamander, *Hynobius*.] 22 (4), 467–473. [In Japanese: English summary p. 473.]
 b. MIYAZAKI, I., 1952.—[Studies on the life-history of *Gnathostoma spinigerum* Owen, 1836 in Japan (Nematoda: Gnathostomidae).] 22 (9), 1135–1144. [In Japanese: English summary pp. 1143–1144.]

- c. MIYAZAKI, I., 1952.—[On the second stage larvae of three species of *Gnathostoma* occurring in Japan (Nematoda: Gnathostomidae).] 22 (11), 1433-1441. [In Japanese: English summary pp. 1438, 1441.]

(402a) *Gnathostoma doloresi* is widely distributed among wild boars in Kyushu. The encysted larvae were found in 11 out of 96 *Hynobius naevius* and one out of 12 *H. stejnegeri*. The larva is enclosed in a fibrous membrane in the muscles of these salamanders. It differs from that of *G. spinigerum* in size and colour of body, size of oesophagus, number, shape and size of the hooklets on the head bulb, size of the cuticular spines, number of transverse rows of cuticular spines and position of the cervical papillae. R.T.L.

(402b) Miyazaki has infected a cat with *Gnathostoma spinigerum*. Gnathostome eggs were obtained from the faeces of leopards imported from Siam. *Mesocyclops leuckarti* and *Eucyclops serrulatus* proved efficient first intermediate hosts. The gnathostome larvae reached the third stage, measuring 4 mm. in length, in the three fishes *Ophicephalus argus*, *Odontobutis obscura* and *Misgurnus anguillicaudatus* when these were fed on the infected cyclops and, although not encysted, the larvae became mature in five months after being fed to the cat. A comparison of *G. spinigerum* and *G. kyushuense* (provisionally so named by Miyazaki in 1950) has convinced the author that these two species are identical. This gnathostome is found abundantly in Kyushu and is a common infection in human beings there. R.T.L.

(402c) Mature second-stage larvae of *Gnathostoma spinigerum*, *G. doloresi* and *G. nipponicum* were reared experimentally in *Mesocyclops leuckarti* and *Eucyclops serrulatus*. These larvae were very similar in shape and structure but were easily differentiated from one another by the characters of the head bulbs and by the number of transverse rows of hooklets and their number and size in each row. The head of *G. spinigerum* had four transverse rows of hooklets of almost equal size and exceeding 40 in each row. *G. doloresi* had four rows of hooklets, unequal in size, and generally less than 40 in number. *G. nipponicum* had three rows of hooklets, equal in size but with less than 40 in each row. R.T.L.

403—Indian Journal of Medical Sciences.

- a. TRIVEDI, B. P., CHOWDHURY, B. & BARUA, D., 1952.—“Hydatid disease of the lungs. A case report.” 6 (9), 591-594.
b. GHARPURE, P. V., 1952.—“Further observations on helminthic antigens.” 6 (9), 601-602.

(403b) Gharpure has tested substances, prepared from media in which *Ascaris* had been kept, which he believes to be antigenic. He found that in all sera obtained from bodies containing *Ascaris* there was a positive titre up to 1:320 but that the number of worms present did not affect the titre. By inoculating rabbits with the preparation and then testing the sera he has shown the substance to be a partial antigen. S.W.

404—Indian Journal of Surgery.

- a. CHANDY, J. & ISAIHAH, P., 1952.—“Clinical manifestations of cysticercosis of the brain.” 14 (1), 53-56.
b. ATMARAMA RAO, G., 1952.—“Hydatid cyst of the kidney.” 14 (1), 61-64.

(404a) Clinical manifestations of cysticerciasis of the brain are classified as acute, sub-acute and chronic. A case report is cited in illustration of each of these categories. R.T.L.

405—Indian Medical Gazette.

- a. LAHA, N. K., 1952.—“A case of strangulated inguinal hernia, right side, with a peculiar complication.” 87 (5), 203-204.
b. SINGH, J., RAGHAVAN, N. G. S., MISRA, B. G., KRISHNASWAMY, A. K. & ROY, R., 1952.—“A note on the ascaricidal value of hetrazan.” 87 (8), 353-356.

(405a) Eleven days after operation for strangulated inguinal hernia, two *Ascaris lumbricoides*, one 5 inches and the other 4 inches long, emerged from the incisional area. The

wound healed six days later. There was no faecal fistula, intestinal perforation or peritonitis. There were no ascaris eggs in the faeces. No worms were evacuated after treatment with santonin.

R.T.L.

(405b) When hetrazan was administered in doses of 2 mg. per kg. body-weight twice daily for five days for bancroftian filariasis, 23.6% out of 993 persons evacuated roundworms. Hetrazan elixir with a base content of 30 mg. per c.c., in a dose of 6 mg. per kg. body-weight thrice daily for seven days, reduced the number of *Ascaris* ova in seven children by 98.1%.

R.T.L.

406—Indian Physician.

- a. DESA, A. E., 1952.—“Ascariasis—a surgical problem.” 11 (5), 93–102.

407—Indian Veterinary Journal.

- a. VAIDYANATHAN, S. N., 1952.—“*Spirocerca lupi* infection in dogs. A few cases treated with hetrazan (Lederle).” 29 (3), 244–247.

(407a) *Spirocerca lupi*, often mixed with *Ancylostoma caninum*, is a fairly common infection in dogs in southern India. Clinical symptoms are sometimes atypical or absent. Vaidyanathan has seen at post-mortem: (i) a *S. lupi* tumour which had opened into the pleural cavity and set up a fatal septic pneumonia and (ii) a tumour of the bladder wall containing four *S. lupi*. Hetrazan at the rate of two 50 mg. tablets twice daily is recommended. As a result of its use in three cases the symptoms disappeared and the general condition improved.

R.T.L.

408—Irish Naturalists' Journal.

- a. GRESSON, R. A. R., 1952.—“A new species of *Proteocephalus* from *Coregonus pollan* Thompson.” 10 (12), 308–309.

(408a) *Proteocephalus pollanicola* n.sp. is recorded from *Coregonus pollan* in Lough Neagh, Northern Ireland. Gresson states that a careful comparison of the characters of his specimens with the descriptions of related forms recorded from *Coregonus* and other freshwater fish revealed important differences [of which he gives no details].

R.T.L.

409—Japanese Journal of Experimental Medicine.

- a. SASA, M., HAYASHI, S., KANO, R., SATO, K., KOMINE, I. & ISHII, S., 1952.—“Studies on filariasis due to *Wuchereria malayi* (Brug, 1927) discovered from Hachijo-Koshima Island, Japan.” 22 (4), 357–390.

(409a) This is a detailed study of the parasitology, epidemiology, clinical manifestations, mosquito vectors, control and therapy of filariasis on Hachijo-Koshima Island, about 130 km. south of Tokyo. In the small, isolated community of about 100 inhabitants the microfilaria rate was 34% and in these, 52% were clinical cases. The filariasis is shown to be due to *Wuchereria malayi*, not reported hitherto for Japan. The main vector is apparently *Aedes togoi*. The oral administration of 2 mg. per kg. body-weight of 1-diethylcarbamyl-4-methylpiperazine citrate (Supatonin) thrice daily resulted, after a ten-day interval, in the blood being negative for microfilariae in those who took a total of more than 26.7 mg. per kg. body-weight and it was still negative four months after treatment in those who had more than 60 mg. per kg. body-weight. The acute attacks were cured but elephantiasis was unaffected. The drug was more effective in infections of *Wuchereria malayi* than in infections of any of the other filariae. It apparently acted on the adults as well as on the microfilariae.

R.T.L.

410—Japanese Journal of Medical Science and Biology. [Cont. of Japanese Medical Journal.]

- a. IZUMI, S. & NAKAMURA, S., 1952.—“Biological studies on *Ascaris* eggs. I. Comparative study of various culture methods of *Ascaris* eggs.” 5 (1), 7-12.
- b. ITO, J., 1952.—“Redescription of *Cercaria nipponensis* Faust, 1924, a xiphidiocercaria in snail host *Semisulcospira* spp. in Japan (Trematoda).” 5 (1), 13-19.
- c. IZUMI, S., 1952.—“Biological studies on *Ascaris* eggs. II. On the penetrating activity of various chemicals to *Ascaris* eggs.” 5 (1), 21-36.
- d. IZUMI, S., 1952.—“Biological studies on *Ascaris* eggs. III. Appearance and decline of nucleic acid, fat and glycogen in consequence of *Ascaris* oögenesis.” 5 (1), 45-51.
- e. ITO, J., 1952.—“A description of two xiphidiocercariae, *Cercaria okabei* Ito, 1949, and cercaria of *Maritrema caridinae* (*Cercaria takahashii* Yokogawa et Ito, 1949), parasitic in *Katayama nosophora* in Japan (Trematoda).” 5 (2), 101-112.

(410a) Tabulated results show that *Ascaris* eggs develop very similarly when cultured on moistened Japanese tiles, clay plates, sand, and filter paper but glass test-tubes were less satisfactory in the earlier and more so in the later period of the culture. The addition of 2% formalin to the cultures proved of little advantage except for those made in glass test-tubes. When pulverized animal charcoal was used the specimens were too much obscured to be studied.

R.T.L.

(410b) *Cercaria nipponensis* Faust, 1924 has been variously named by Japanese writers as *Cercaria* “hei”-[*Cercaria* C], *Cercaria* V, VI and XII, and *Xiphidiocercaria* A, but the descriptions were very incomplete. Ito now gives an illustrated and detailed description of *C. nipponensis* from material obtained from the melanid snails, *Semisulcospira japonica*, *S. libertina* and *S. reimana*. The flame cell pattern is $2 \times [(2+2+2) + (2+2+2)]$. Ogata, in an unpublished communication, states that he has proved that *C. nipponensis* is a bat trematode and belongs to the family Lecithodendriidae, the flame cell pattern of which, however, Faust has given as $2 \times [(3+3) + (3+3)]$.

R.T.L.

(410c) Izumi has investigated the penetrative action of various chemicals on *Ascaris* eggs at room temperatures. Organic solvents, especially chloroform, ether benzol and carbon disulphide penetrate readily; toluol, carbon tetrachloride, xylol, phenol and ethyl acetate do so to a lesser extent; n-butanol, alcohol, creosote and acetone have a weak penetrative power. The action of a series of fractional distillation products of tar is correlated with their boiling points. Alkali and salts have almost no effect. It is considered that the lipids contained in the egg-shell play an important role in its permeability.

R.T.L.

(410e) *Katayama nosophora*, vector of *Schistosoma japonicum* in Japan, is frequently host to *Cercaria okabei* and *C. takahashii*. These two xiphidiocercariae are redescribed and figured. Their incidence and that of the cercaria of *S. japonicum* in Yamanashi, Fukuoka and Saga in Japan is tabulated. *C. okabei* belongs to Nöller's ophthalmo-xiphidiocercariae group which has been divided into four sub-groups, viz., *Crepidostomum* (7 spp.), *Stephanostomum* (1 sp.), *Misa* (2 spp.) and *Pomatiopsis* (2 spp.). The life-cycle of *C. takahashii* which belongs to Lühe's Microcotyle group has recently been traced by Shibue in *Jap. med. J.*, 1951, 4, 315-324. The metacercaria encysts in the shrimp, *Neocaridina denticulata*; the adult occurs naturally in the bird, *Rostratula benghalensis*, and has been experimentally produced in mice.

R.T.L.

411—Japanese Journal of Pharmacology. [Cont. of Japanese Journal of Medical Sciences. IV. Pharmacology.]

- a. KOBAYASHI, Y., BANDO, T. & ISHIZAKI, T., 1952.—“Locomotion of *Ascaris suilla* et *lumbricoides* and the influence of anthelmintics upon them.” 1 (2), 130-143.

(411a) By means of experiments in a glass tube in the shape of the intestine the authors have discovered a hitherto undescribed mode of locomotion of *Ascaris lumbricoides* in the intestine: it is characterized by “a dorso-ventral bending and stretching of the body, making a curvature on the hind part of the body and then sliding the body forward in a wave-like

motion through two or three curvatures on the fore portion of it". The period of the movement was influenced by changes in the temperature of the Locke-Ringer's solution in the tube, the optimum for experimental purposes being 32°C. In the presence of santonin this type of locomotion ceased and the body began to curl round itself in a series of spasmodic movements, finally involving the entire body.

P.M.B.

412—Journal of Agriculture of Western Australia.

- a. CRAIG, J., 1952.—"Internal parasites of cattle. A common cause of mortality in the south-west." 3rd series, 1 (5), 699-704.

(412a) Mortality in young stock in the south-west of Western Australia is due to intestinal helminthiasis. The species particularly implicated are *Ostertagia ostertagi*, *Cooperia* spp. and *Trichostrongylus* spp. including *T. axei*. Symptoms are most frequently observable in late autumn, winter and early spring. Calves are most susceptible but young cattle up to 18 months old may also become affected.

R.T.L.

413—Journal of the American Chemical Society.

- a. SURREY, A. R., SUTER, C. M. & BUCK, J. S., 1952.—"New anthelmintics. The synthesis of some 9-hydroxyalkyl- and dihydroxyalkyl-aminoalkylaminoacridines." 74 (16), 4102-4103.

(413a) The procedure followed in the synthesis of a series of aminoacridines is described. Some of the compounds have been found to be unexpectedly effective against *Aspiculuris tetraptera* and *Syphacia obvelata* in mice. Details of these tests will be published later. R.T.L.

414—Journal of the Bengal Natural History Society.

- a. ADAMS, E. G. P., 1952.—"Some jungle pests and remedies." 25 (4), 193-196.

(414a) Leeches are very troublesome in the jungle in Upper Burma. A useful preventative is to sew up the boot tongues, apply kerosene or citronella compound ointment to the legs and feet, and wear puttees over slacks. The irritable bites can be relieved by applying Milton undiluted.

R.T.L.

415—Journal of Biological Chemistry.

- a. BUEDING, E. & CHARMS, B., 1952.—"Cytochrome c, cytochrome oxidase and succinoxidase activities of helminths." 196 (2), 615-627.

(415a) Bueding & Charms found no cytochrome c or cytochrome oxidase activity in homogenates prepared from the muscle of *Ascaris lumbricoides* or from *Litomosoides carinii*. The activity of these systems in *Schistosoma mansoni* homogenates accounted for less than 10% of the total oxygen uptake. *Ascaris* muscle was found to contain a succinoxidase system which reacted directly with molecular oxygen.

W.P.R.

416—Journal of Cellular and Comparative Physiology.

- a. GLOCKLIN, V. C. & FAIRBAIRN, D., 1952.—"The metabolism of *Heterakis gallinae*. I. Aerobic and anaerobic respiration: carbohydrate-sparing action of carbon dioxide." 39 (3), 341-356.

(416a) Glocklin & Fairbairn found that *Heterakis gallinae* respired Krebs-Ringer phosphate in air with an average QO_2 of 4.2. When the oxygen pressure was 7.6 mm. of mercury, the uptake was reduced to about 43% of this value. The R.Q. averaged 0.74. Anaerobically produced carbon dioxide was shown to be of metabolic origin. Glycogen formed a large part of the endogenous reducing substances; both glycogen and non-glycogen reducing substances (probably phosphate esters) were utilized when the parasites were maintained *in vitro* in Krebs-Ringer phosphate. The utilization of reducing substances was accompanied by acid production. The volatile acids produced were largely acetic and propionic; the non-volatile acid fractions, about 30% of the total, contained a large amount of an unidentified

acid which had a R_F value which differed from those of the common intermediary acids. Carbon dioxide has a marked sparing action on the utilization of endogenous reducing substances. In 5% carbon dioxide, either in the presence or absence of oxygen, the utilization of these reserves was reduced by more than one half.

W.P.R.

417—Journal of the Chemical Society. London.

- a. MORLEY, J. S., 1952.—“The chemotherapy of filariasis. Part I. Monoacyl derivatives of 1:2:3:4-tetrahydroquinoxaline.” Year 1952, pp. 4002–4008.
- b. MORLEY, J. S., 1952.—“The chemotherapy of filariasis. Part II. Monoacyl derivatives of 5:10-dihydro- and *trans*-1:2:3:4:5:10:11:12-octahydrophenazine.” Year 1952, pp. 4008–4014.

(417a) As hetrazan has proved the most successful of the derivatives of piperazine in the treatment of human and canine filariasis, a series of investigations was made to throw light on certain features of the piperazine molecule that may be essential for biological activity. This communication deals only with the chemical results. The biological work will be reported upon later.

R.T.L.

(417b) Monoacyl derivatives of tetrahydroquinoxaline were readily obtained by direct reaction between the base and an acylating agent. Details are given of the preparation of phenazine by Ris's method.

R.T.L.

418—Journal du Conseil Permanent International pour l'Exploration de la Mer. Copenhagen.

- a. DOLLFUS, R. P., 1952.—“Parasites du *Germo alalunga* (J. F. Gmelin 1788).” 18 (1), 42–44.

(418a) This list of the parasites of the marine fish, *Germo alalunga*, brings up to date that contributed by Dollfus to a monograph by Legendre entitled “La faune pélagique de l'Atlantique au large du Golfe de Gascogne, recueillie dans des estomacs de germans.—Troisième partie: Invertébrés (Céphalopodes exclus). II. Parasites du germon”, published in *Ann. Inst. océanogr. Monaco*, 1940, 20, 127–310.

R.T.L.

419—Journal of the Elisha Mitchell Scientific Society.

- a. BAUGHN, Jr., C. O., 1952.—“The effect of adrenalectomy on natural and acquired resistance of mice to *Trichinella spiralis*.” 68 (2), 207–221.
- b. COX, H. W., 1952.—“The effect of concurrent infection with the dog hookworm, *Ancylostoma caninum*, on the natural and acquired resistance of mice to *Trichinella spiralis*.” 68 (2), 222–235.

(419a) It is shown that adrenalectomy significantly increases the natural and the acquired resistance of white mice to experimental infections with *Trichinella spiralis*. This indicates a common factor. Light might be shed on the mechanism of this resistance if the factor could be demonstrated.

R.T.L.

(419b) Further details and tabulated data are given of experiments on the effect of an *Ancylostoma caninum* infection on natural resistance and on the maintenance of acquired resistance of mice to *Trichinella spiralis*. These have already been reported in the author's abstracts in *J. Parasit.*, 38 (4, Sect. 2), Suppl. pp. 19–20 [for abstracts see *Helm. Abs.*, 21, Nos. 230bf, 230bg].

R.T.L.

420—Journal of the Faculty of Medicine of Baghdad, Iraq.

- a. JAWAD, H., 1952.—“Four cases of trichostrongyliasis in Iraq.” 16 (2), 68.

(420a) Four cases of trichostrongyliasis have been recognized by the Department of Bacteriology, Baghdad, during the past ten years. They were all Iraqis with symptoms of anaemia and epigastric pain and had been suspected of suffering from hookworm infection.

R.T.L.

421—Journal of the Fisheries Research Board of Canada.

- a. KELEHER, J. J., 1952.—“Growth and *Triaenophorus* parasitism in relation to taxonomy of Lake Winnipeg ciscoes (*Leucichthys*).” 8 (7), 469–478.

(421a) It is suggested that the incidence of *Triaenophorus crassus* plerocercoids and the mean number of cysts per fish in the four species of ciscoes (*Leucichthys*) which inhabit Lake Winnipeg might be utilized for the identification of the host species. R.T.L.

422—Journal of Helminthology.

- a. HUNTER, G. C. & QUENOUILLE, M. H., 1952.—“A statistical examination of the worm egg count sampling technique for sheep.” 26 (4), 157–170.
b. MARKOWSKI, S., 1952.—“The cestodes of pinnipeds in the Arctic and other regions.” 26 (4), 171–214.

(422a) The distribution of worm egg counts in the faeces of naturally infected sheep when made by the McMaster slide technique closely followed a Poisson series on each sheep, and a negative binomial distribution when taken on different members of the same flock. The ultimate decision as to size of sample depends on the amount of work involved in collecting and analyzing samples of different sizes, for the time spent on counting is relatively small. An increase in the number of slides to give a mean count per sheep of about four is warranted, but beyond this the increase in efficiency does not warrant the extra work. It is estimated that one week is the optimum interval between sampling unless rapid changes are expected. The parameters of the negative binomial should be used when comparing egg counts of naturally infected sheep. The fitting of the negative binomial distribution is not easy to carry out but an approximate method, sufficiently accurate for practical purposes, is described. R.T.L.

(422b) The pseudophyllid cestodes of pinnipeds mainly found in the northern hemisphere total thirty species belonging to eight genera. The number of testes counted in transverse and sagittal sections, the arrangement and development of the longitudinal muscles as seen in transverse section, and the structure and shape of the cirrus sac as seen in sagittal section are considered satisfactory for specific identification. With these criteria Markowski has reduced the number of known species from 30 to 15, including six which are still insufficiently known for their systematic position to be determined. The nine species accepted as valid are *Diphyllbothrium cordatum*, *D. elegans*, *D. glaciale*, *D. hians*, *D. lanceolatum*, *D. scoticum*, *Diplogonoporus tetraapterus*, *D. fasciatus*, and *Pyramicocephalus phocarium*. R.T.L.

423—Journal of the Indian Medical Association.

- a. HEILIG, R., 1952.—“Studies on hookworm infection.” 21 (8), 356–362.
b. GHOSH, K. K., 1952.—“Acute haemorrhagic pancreatitis due to round worms.” 21 (10), 437–438.
c. RAO, K. A., 1952.—“Hydatid cyst liver—rupture into alimentary canal.” 21 (12), 520–521.
d. CHAUDHURI, K. D., 1952.—“Immediate effect of deworming in patients with peptic ulcer-like syndrome.” 22 (1), 15–16.

(423a) Contrary to earlier reports, ancylostomiasis is widespread and often severe in Jaipur State. The importance of iron therapy and the conditions which make the anaemia iron-refractory in some cases are discussed. R.T.L.

(423d) In 13 out of 15 patients with a syndrome similar to that of a peptic ulcer, the symptoms immediately disappeared after a course of anthelmintic treatment with tetrachlorethylene for hookworm which had apparently set up a duodenitis. In 11 of the patients occult blood was detected in the faeces. R.T.L.

424—Journal of Infectious Diseases.

- a. KAGAN, I. G., 1952.—“Acquired immunity in mice infected with *Schistosomatum douthitti*.” 91 (2), 147–158.
b. STIREWALT, M. A. & EVANS, A. S., 1952.—“Demonstration of an enzymatic factor in cercariae of *Schistosoma mansoni* by the streptococcal decapsulation test.” 91 (2), 191–197.

- c. KAGAN, I. G. & LEE, C.-L., 1952.—“Chemotherapy of experimental infections of mice with *Schistosomium douthitti*, *Schistosoma mansoni* and *Schistosoma japonicum*.” 91 (3), 224-230.

(424a) Kagan reviews the literature dealing with the demonstration of acquired immunity in animals experimentally exposed to schistosomes (*Schistosoma japonicum*, *S. mansoni* and *S. spindale*). He describes, at great length, his experiments investigating the possible presence of an acquired immunity in mice exposed to infections of *Schistosomium douthitti*. From data, based on the numbers of worms and their stage of somatic development, collected at autopsies, it is concluded that immunity to superinfection was acquired by mice (CFI, Carworth Farms strain) against *S. douthitti* in 35 to 127 days after an initial infection. Resistance was increased by repeated exposures at 5 or 6-day intervals for several weeks. The males and females developing from the challenging exposures were stunted in growth and reduced in number compared with those in the control mice. An initial infection with female worms produced an acquired immunity after 60 to 121 days to superinfection with male, female or male and female infections. The immunity was in this case manifested not by a retardation of development but by a reduction in number. In initial male infections, except one, no resistance to superinfection as indicated by a reduction in the number in the challenging infection resulted. The male worms in the challenging infection were stunted but the females developed normally. P.L.I.E.R.

(424b) Stirwalt & Evans record in detail their technique and experiments designed to demonstrate the presence of an enzymatic factor in cercariae of *Schistosoma mansoni*. Their qualitative studies proved that the cercarial preparations contained a thermolabile factor which reduced rapidly the capsular zones of Group C mucoid β -haemolytic streptococci. One of the chief components of the capsules of these streptococci is hyaluronic acid which is depolymerized and made to disappear by the action of enzymes of hyaluronidase type. Their cercarial preparations, like known concentrations of hyaluronidase of bull testis, reduced the capsular zones of Group C streptococci rapidly. P.L.I.E.R.

(424c) The schistosomicidal activity of miracil-D and three antimony compounds was tested on mice. Miracil-D proved 98.5% effective against *Schistosoma mansoni* but ineffective against *Schistosomium douthitti*. Of the three antimonials, tri-(*n*-dodecylmercapto)-s-antimonious acid dissolved in peanut oil and injected intraperitoneally was the most effective against *Schistosoma mansoni*, *S. japonicum* and *Schistosomium douthitti*. It caused the worms to move from the mesenteric vessels towards the liver. Protocols are given of the experiments with 2-hydroxy-4-methylol-4,5, dihydro-1,3,2 dithiastibiole and butyl antimonyl gallate given orally and in suspension in diluted carboxymethylcellulose. The morphological and biological similarities of *S. douthitti* and *Schistosoma japonicum* suggest that *Schistosomium douthitti* may be a useful screening model for schistosomiasis japonica. R.T.L.

425—Journal of the International College of Surgeons.

- a. BENDANDI, G., 1952.—“Modern view of the surgical treatment of pulmonary hydatid cyst.” 18 (1), 22-25. [French, German, Italian, Spanish & Portuguese summaries pp. 24-25.]
b. JINNAI, D., YAMANE, S. & SATOO, T., 1952.—“Surgical experience with brain abscesses and cysts caused by *Paragonimus westermani*.” 18 (1), 32-39. [French, German, Italian, Spanish & Portuguese summaries pp. 38-39.]

(425a) The use of transfusions, protein therapy, vitamins etc. before, during and after operation for the removal of hydatid of the lung has almost completely eliminated post-operative complications. In the most recent cases at the surgical clinic of the University of Rome the procedure followed was: (i) narcosis by endotracheal intubation, with premedication with morphine and atropine, sodium pentothal, intubation, curare, nitrous oxide, ether and oxygen; (ii) localization of the cyst by two roentgenograms; (iii) intra-operative perfusion, with control of the pulse, blood pressure and oxygen rate; (iv) operation: the liquid and membrane was removed by an aspirator and partial exeresis of the pericyst. R.T.L.

(425b) Three out of six cases of cerebral paragonimiasis were recognized by craniotomy and cured by extirpation of the cysts.

R.T.L.

426—Journal de Médecine de Lyon.

- a. COUDERT, J., 1952.—"Remarques sur le diagnostic parasitologique et les critères de guérison de la distomatose hépatique de l'homme." 33 (778), 565-568.
- b. ROMAN, E., LANTERNIER, J. & LARBRE, F., 1952.—"Helminthiase sévère avec implantation de trichocéphales jusque dans le rectum." 33 (783), 765-767.

(426a) During the interval between infection with liver-fluke and the appearance of the eggs in the bile or faeces, the intradermal reaction with liver-fluke extract provides an easy, sensitive and specific method of diagnosis. Next to this, as the method of choice, is the search for fluke eggs in the sediment of centrifuged bile collected by duodenal sound. The efficacy of treatment may be judged by repeated examinations.

R.T.L.

(426b) In a boy, five years old, with numerous *Trichuris* eggs in the faeces, *Trichuris* worms implanted in the mucous membrane of the lower part of the rectum were seen by proctoscopic examination.

R.T.L.

427—Journal of the National Cancer Institute.

- a. HITCHCOCK, C. R. & BELL, E. T., 1952.—"Studies on the nematode parasite, *Gongylonema neoplasticum* (*Spiroptera neoplasticum*), and avitaminosis A in the forestomach of rats: comparison with Fibiger's results." 12 (6), 1345-1387.

(427a) Hitchcock & Bell have failed to produce malignant lesions in the fore-stomach of rats by experimental infection with *Gongylonema neoplasticum*. Many of the changes originally described by Fibiger were found to occur only in those rats which were on a vitamin A deficient diet. *G. neoplasticum* infection heightened the effect. They conclude that the parasite acts as a biologic chronic irritant but produces only minimal effects on the squamous epithelium when there is no nutritional deficiency. The list of references contains 57 titles. There are 26 photographs on 11 plates.

R.T.L.

428—Journal of Parasitology.

- a. BULLOCK, W. L., 1952.—"Two new species of monostomes from the Canada goose with a review of *Paramonostomum alveatum* (Mehlis in Creplin, 1846)." 38 (5), 371-378.
- b. READ, C. P. & AMREIN, Y. U., 1952.—"Some new oxyurid nematodes from Southern California." 38 (5), 379-384.

(428a) In a Canada goose, *Branta canadensis*, found dead at Durham, New Hampshire, U.S.A., there were large numbers of Notocotylinæ. Some belonged to *Catatropis* but differed from known species in having a metraterm longer than the cirrus sac which enclosed only a small portion of the seminal vesicle. These have been named *C. harwoodi* n.sp. Other specimens are named *Paramonostomum brantæ* n.sp. The main characteristic of this genus is the absence of ventral glands. The new species resembles most closely the type species *P. alveatum* but lacks the rosette-shaped lobation of the ovary and has a larger cirrus sac. A detailed study of the species of *Paramonostomum* indicated that the relationship of the forward distribution of the vitellaria to the posterior end of the cirrus sac is a significant specific character but only if the total distribution of the vitellaria is also considered. The number of uterine folds is probably of considerable importance also. These characters differentiate the European and American species of *Paramonostomum*.

R.T.L.

(428b) Three oxyurids from reptiles in southern California are named, viz., *Thelandros californiensis* n.sp. from *Xantusia vigilis* and *X. henshawi*; *T. bicaudatus* n.sp. from *X. r. riversiana*; *T. minutus* n.sp. from *Batrachoseps a. attenuatus*, and *Pseudoalaeuris waltoni* n.sp. from *X. r. riversiana*. The new species are described, figured and differentiated from known species. *Thelandros* sp. of Walton, 1941 is named *T. waltoni* n.sp.

R.T.L.

428—Journal of Parasitology (cont.)

- c. MACFARLANE, W. V., 1952.—“Bionomics of two trematode parasites of New Zealand eels.” **38** (5), 391–397.
- d. NEILAND, K. A. & SENGER, C. M., 1952.—“Helminths of northwestern mammals. Part I. Two new species of *Hymenolepis*.” **38** (5), 409–414.
- e. RAUSCH, R., 1952.—“Studies on the helminth fauna of Alaska. XI. Helminth parasites of microtine rodents—taxonomic considerations.” **38** (5), 415–444.
- f. BEAVER, P. C., 1952.—“Observations on the epidemiology of ascariasis in a region of high hookworm endemicity.” **38** (5), 445–453.

(428c) In New Zealand *Anguilla dieffenbachii* and *A. australis* are frequently infected with *Telogaster opisthorchis* and *Stegodexamene anguillae*. The first intermediaries are species of *Potamopyrgus*, and the second the gobiids, *Gobiomorphus gobioides* and *Philypnodon* spp. Macfarlane has studied the population density of the parasites in a lake, two slow-flowing and one fast-flowing streams, and has correlated this with the age, habits and numbers of hosts, presenting quantitative data on the interrelationship of the behaviour patterns and environment. *Potamopyrgus* is ubiquitous, breeding continues throughout the year and the degree of infection increases with the size of the snails. Eels do not become parasitized until about nine years old, when the change from a cryptozoic to a phanerozoic mode of life takes place and they start to feed on larger animals, particularly the immature phanerozoic gobiids in still and slow-moving waters and the larger cryptozoic gobiids in fast-flowing streams. *Stegodexamene* cercariae are thigmotropic and tend to infect the older gobiids; *Telogaster* cercariae are positively phototropic and infect the young fish. The eels in the lake were not as heavily parasitized as those in the fast-flowing stream. S.W.

(428d) *Hymenolepis oregonensis* n.sp. from the muskrat, *Ondatra zibethica occipitalis*, and *H. olsoni* n.sp. from the mole, *Scapanus townsendi*, are described, figured and differentiated from other mammalian species of the genus. In *H. oregonensis* the male genital organs are developed precociously and the eggs are somewhat elongated with a slight constriction in the middle region. The number, size and shape of the hooks and the relative size and morphology of the eggs differentiate *H. olsoni* from most species of the genus. R.T.L.

(428e) Twenty-eight helminth species were recovered from 2,078 microtine rodents collected in Alaska, northern Canada and Eurasia, and were examined by Rausch. The taxonomy of each species is discussed. Five belong to *Paranoplocephala* including *P. lemmi* n.sp. from the lemmings, *Lemmus trimucronatus alascensis*, *L. t. trimucronatus* and *L. t. harroldi*. It differs from *P. infrequens* in size of strobila, cirrus sac and egg, in the number of segments and testes and in the character of the uterus. The three species of *Andrya* recorded include *A. arctica* n.sp. from *Dicrostonyx groenlandicus rubricatus*. It is distinguished by its small, delicate strobila, relatively large cirrus sac and large eggs, and clearly belongs to the subgenus *Aprostotandrya*. On St. Lawrence Island there are hydatid infections in the voles *Microtus oeconomus inuitus* and *Clethrionomys rutilus albiventer*. On the mainland, natural infection of rodents is unknown and the natural intermediary is the moose. Rausch considers that there are at least six species of *Echinococcus* and intends to report on these later. *Taenia crassiceps* is recorded for the first time in North America. R.T.L.

(428f) The low endemicity of *Ascaris lumbricoides* in the population of the coastal plains of south-eastern Georgia, where the endemicity of hookworm is high, was found to be due to the sandy character of the top soil. The sandy soil, unlike clay soils, fails to retain surface moisture and to stratify the eggs just beneath the surface; it thus does not protect them from direct sunlight and desiccation. Experiments indicated that *Ascaris* eggs develop and survive better in shaded clay soil than in shaded sandy soil, and that in 20 days they can be dispersed laterally at least 1.5 metres and can also be deposited on vertical boards and vegetation up to 30 cm. from the ground by the splashing of raindrops, the sorting action of which concentrates the eggs in the topmost layer of sandy soil, whereas in clay soil they are buried under a fine colloidal layer. R.T.L.

428—Journal of Parasitology (cont.)

- g. VOGÉ, M., 1952.—“Variability of *Hymenolepis diminuta* in the laboratory rat and in the ground squirrel *Citellus leucurus*.” 38 (5), 454-456.
- h. SCHELL, S. C., 1952.—“Studies on the life cycle of *Physaloptera hispida* Schell (Nematoda: Spiruroidea) a parasite of the cotton rat (*Sigmodon hispidus littoralis* Chapman).” 38 (5), 462-472.
- i. SENER, C. M. & MACY, R. W., 1952.—“Helminths of northwest mammals. Part III. The description of *Euryhelms pacificus* n.sp., and notes on its life cycle.” 38 (5), 481-486.
- j. HUNTER, III, G. W., RITCHIE, L. S. & OTORI, Y., 1952.—“A comparison of the infectivity of *Schistosoma japonicum* occurring in Japan for *Oncomelania nosophora* and *Oncomelania formosana*.” 38 (5), 492.
- k. WARD, H. L., 1952.—“Glycogen consumption in *Acanthocephala* under aerobic and anaerobic conditions.” 38 (5), 493-494.
- l. WARREN, B. H., 1952.—“Report of parasites from the Lake Superior cisco, *Leucichthys artedii arcturus*.” 38 (5), 495.

(428g) *Hymenolepis diminuta* has been experimentally transmitted to the ground-squirrel, *Citellus leucurus*, by feeding with cysticercoids of *Hymenolepis* reared in laboratory-bred *Tenebrio molitor* infected with eggs of *H. diminuta* from *Rattus norvegicus*. It has been suggested that *H. citelli* of the ground-squirrel is synonymous with *H. diminuta* of *R. norvegicus*. The experimentally reared specimens and the controls did not differ in morphology or in the variability and incidence, in the position and number of testes and other types of abnormalities. The worms reared in *C. leucurus* did not adopt the characters which distinguish *H. citelli* from *H. diminuta* from the rat.

R.T.L.

(428h) The life-cycle of *Physaloptera hispida* of the cotton-rat has been completed experimentally in *Forficula auricularia*, *Harpalus* spp. and *Blatella germanica*. In the cockroach, the hatched larva penetrates the peritrophic membrane of the colon and undergoes its further development encysted in the epithelial cells. The cyst protrudes from the outer colon wall and may become pedunculated. The larva completes its growth in 30-35 days after hatching and measures 1.04-1.2 mm. in length. Laboratory-bred cotton-rats were experimentally infected and the worms reached sexual maturity in 73-90 days. Common rats (*Rattus norvegicus*) and albino rats were also infected in the laboratory.

R.T.L.

(428i) *Euryhelms pacificus* n.sp. from *Mustela vison*, *Ondatra zibethica* and *Sorex bendirii palmeri* caught near Portland, Oregon, differs from *E. squamula* and *E. monorchis* in having a pyriform shape, a definite prepharynx and an oral sucker larger than the acetabulum. The molluscan intermediary and the cercaria are unknown but metacercariae were found encysted in the muscles of the salamander *Dicamptodon ensatus* and white rats were infected experimentally. 3.7% of 293 specimens of this heterophyid were mirror images of the more typical form.

R.T.L.

(428j) From tabulated results of the exposure of *Oncomelania nosophora* and *O. formosana* to laboratory infection with one and ten miracidia of *Schistosoma japonicum* autochthonous to Japan, it appears that *O. formosana*, although it serves as a host of *S. japonicum* in Formosa, is an unsuitable host for the Japanese strain.

R.T.L.

(428k) Ward has maintained adult female *Macracanthorhynchus hirudinaceus* in glucose-free Ringer-Tyrode solution for 43 hours at 37°C. under aerobic and anaerobic conditions. Penicillin and streptomycin were included in the medium to prevent growth of microorganisms. At the end of the experiment the worms were alive and there was no visible growth of microorganisms; the worms which had been kept aerobically appeared to be in slightly better condition than the others. She found that under aerobic conditions the average glycogen consumption in 43 hours was 1.09 gm. per 100 gm. worms, compared with 1.4 gm. under anaerobic conditions; the quotient of anaerobic: aerobic consumption was 1.27.

S.W.

(428l) The eight helminths found in ciscoes (*Leucichthys artedii arcturus*) from Lake Superior are tabulated. *Crepidostomum farionis*, *Echinorhynchus leidy* and *Neoechinorhynchus cylindricus* are new records for the host.

R.T.L.

428—Journal of Parasitology (cont.)

- m. ALICATA, J. E., 1952.—“Autochthonous infection of cattle in Hawaii with *Fasciola hepatica* Linn.” 38 (5), 495-496.
- n. MANN, P. H. & FRATTA, I., 1952.—“The incidence of coccidia, heartworms, and intestinal helminths in dogs and cats in northern New Jersey.” 38 (5), 496-497.
- o. TROMBA, F. G., 1952.—“*Myotis lucifugus lucifugus*; a new aberrant host for the third stage larva of *Physocephalus sexalatus* (Molin, 1860).” 38 (5), 497.
- p. OGREN, R. E., 1952.—“Demonstration of ribonucleic acid in the oncosphere and adult of *Mesocostoides* by means of ribonuclease.” 38 (5), 498.
- q. HUNTER, III, G. W., FREYTAG, R. E. & RITCHIE, L. S., 1952.—“Potential molluscicides screened in the laboratory and the results of preliminary field plot tests.” 38 (6), 509-516.
- r. MAYHEW, R. L., 1952.—“Studies on bovine gastro-intestinal parasites XIX. Further studies in the use of small amounts of phenothiazine in pure infections of the nodular worm.” 38 (6), 525-531.

(428m) In Honolulu, a single specimen of *Fasciola hepatica* and 44 of *F. gigantica* were recovered from a cow born near Kaneohe on the island of Oahu and reared in the Kokakahi swamp area. This is the first proved case of the occurrence of *F. hepatica* in the Hawaiian Islands. Alicata recalls that in a cow imported in 1944 from California and slaughtered two months later in Honolulu, he had found adult *F. hepatica*, had experimentally infected the local limnaeid, *Fossaria ollula*, and with the cercariae had subsequently obtained *Fasciola hepatica* in rabbits.

R.T.L.

(428n) The nine species of helminths found in 100 cats and 55 dogs in northern New Jersey are tabulated. *Dirofilaria immitis* occurred in three of the dogs but in none of the cats.

R.T.L.

(428o) Third-stage larvae of *Physocephalus sexalatus* of swine were found encapsulated and deeply embedded in the duodenal wall and on the mesenteries of 18 out of 100 bats, *Myotis l. lucifugus*, taken from caves in Pendleton Co., West Virginia.

R.T.L.

(428p) Ogren has stained sections of adults and oncospheres of *Mesocostoides variabilis* with methyl green-pyronin. The cytoplasm stained red, indicating the presence of ribonucleic acid and the nuclei stained green, indicating the presence of desoxyribonucleic acid. After treating with ribonuclease and staining as before there was no pyronin red colouration in the cytoplasm but the nuclei continued to stain green. Control sections treated with buffer solution without the enzyme, stained as had the original sections. Ogren concludes that if, under the conditions of the experiment, ribonuclease acted specifically on ribonucleic acid, this acid is normally present in the cytoplasm.

S.W.

(428q) *Oncomelania nosophora*, vector of *Schistosoma japonicum*, was effectively controlled in screening and field plot tests by Dowcide 2-S (90% 2,4,6-trichlorophenol), Dowcide G (75% sodium pentachlorophenate plus 13% other soluble chlorophenols), Dowcide B (2,4,5-trichlorophenol sodium salt) and copper pentachlorophenate. The results of the experiments are discussed in some detail and it is stated that the nature of the plant growth and the amount of soil moisture in the different test plots probably influenced their effectiveness. These factors must be considered in deciding the best dosage in a programme of field control.

R.T.L.

(428r) Continuing his studies on the effect of small doses of phenothiazine in reducing *Oeosophagostomum radiatum* egg output by infected calves [see Helm. Abs., 20, No. 41n], Mayhew finds that 0.5 gm. daily for at least 14 days is necessary to eliminate the eggs from the faeces. Although this would reduce the probability of heavy infections and losses among the rest of the herd, there is no evidence that the treated animals would benefit.

R.T.L.

428—Journal of Parasitology (cont.)

- s. BYRD, E. E. & SCOFIELD, G. F., 1952.—“Developmental stages in the Digenea. I. Observations on the hatchability and infectivity of ochetosomatid eggs in physid snails.” 38 (6), 532–539.
- t. NEILAND, K. A., 1952.—“A new species of *Proteocephalus* Weinland, 1858, (Cestoda), with notes on its life history.” 38 (6), 540–545.
- u. SCHILLER, E. L., 1952.—“Studies on the helminth fauna of Alaska. X. Morphological variation in *Hymenolepis horrida* (von Linstow, 1901) (Cestoda: Hymenolepididae).” 38 (6), 554–568.

(428s) Byrd & Scofield have studied in detail the infection rate and developmental period in physid snails when exposed to (i) a single ochetosomid egg, (ii) a known number of *Neorenilifer aniarum* eggs and (iii) 10 or more eggs of various ochetosomids. The results are set out in tables which give the number of cercariae ultimately shed, the percentage of infections and the average developmental period. In none of the experiments was the rate of infection over 50%. The hatchability of the eggs following their ingestion was then tested and the experimental snails were killed at intervals of 30 minutes to 97 hours after the eggs were ingested. The details are tabulated. Although large numbers of the ingested eggs hatched and some miracidia penetrated into the host's tissues, only a few of these miracidia were able to survive to even the mother sporocyst stage. [An author's abstract of this paper appeared in the Program and Abstracts of the 27th Annual Meeting of the American Society of Parasitologists issued in the *J. Parasit.*, 38 (4, Sect. 2), Suppl. p. 36 (for abstract see Helm. Abs., 21, No. 230dc).]

R.T.L.

(428t) *Proteocephalus primaverae* n.sp. collected from *Salmo clarkii* near Stevenson, Washington, has 59–89 testes (average about 74). The uterus has 13–15 lateral pouches on either side. The ductus ejaculatorius is straight or has one or two coils. A fifth sucker is absent. Cultures of *Diaptomus franciscanus* were inoculated with concentrated suspensions of viable eggs and incubated for 15 days at 15°C. Many of the copepods were then found infected with *Proteocephalus* larvae whereas the controls were negative.

R.T.L.

(428u) Intersegmental and interstrobilar variations which occur in the unarmed *Hymenolepis* which parasitize certain rodents often render their specific identification almost impossible. Schiller has attempted to assess the significance of these variations by examining a series of *Hymenolepis horrida* collected over a wide area in North America. Detailed consideration of the various morphological characters showed that in their variability there was no mutual or reciprocal relationship. Variation in one character appeared to be completely independent from that of any other. A modified diagnosis of *H. horrida* is therefore presented. Variations in the scolex, suckers and mature segments and stages in the early development are figured on four plates.

R.T.L.

429—Journal of the Philippine Medical Association.

- a. PESIGAN, T. P., 1952.—“Studies on schistosomiasis: second progress report on mass surveys and other accomplishments as of December 31, 1951.” 28 (4), 177–189.

(429a) During the two and a half years ending in December 1951, the Division of Schistosomiasis of the Public Health Research Laboratories of the Department of Health in the Philippines undertook mass surveys of 132 towns in 16 provinces. Endemic areas were located in 61 towns of 12 provinces. *Oncomelania quadrasi* was present in all these except in Barugo. Of 123,291 persons examined, 10,796 (12.2%) were found to be infected with *Schistosoma japonicum*. Of these, 5,318 were treated with foudadin and 272 were treated with nilodin. A table gives detailed statistics of the incidence of schistosomiasis and the number of patients treated in endemic areas from May, 1949 to December, 1951. [Some results have already been published in a special number of the *J. Phil. med. Ass.* in April, 1951. For abstracts see Helm. Abs., 20, No. 453.] There is a map folder of the known endemic areas for *S. japonicum* in the Philippines as at 31st December, 1951. Statistical tables also give the

incidence of *Ascaris*, *Trichuris*, and hookworm in areas where schistosomiasis is endemic and in those where schistosomiasis is not endemic. Experimental small-scale treatment of snail infested areas with dinitro compounds, sodium pentachlorophenate, and flame gun was tried. Although the snail densities were lowered, repeated treatments proved necessary to keep down the molluscan population. R.T.L.

430—Journal of the Royal Egyptian Medical Association.

- a. ANON., 1952.—[Obituary—M.A. Azim.] 35 (3), 149–156.
- b. GRACE, H. K. & AIDAROS, S. M., 1952.—“The pathogenesis of intrapelvic schistosomiasis with special reference to bilharziasis of the seminal vesicles.” 35 (6), 355–365.
- c. ABOU-EL-NAGA, I. & SALEH, A., 1952.—“Blood eosinophilia in parasitic infections endemic in Egypt.” 35 (8), 526–532.
- d. RAGAB, M. M., 1952.—“The portal circulation time in bilharzial hepato-lienal fibrosis.” 35 (8), 533–544.
- e. ABDEL SHAFI, M., 1952.—“Bilharziasis of the seminal vesicles.” 35 (9/10), 613–626.
- f. GALAL, O., 1952.—“Ligature of the splenic artery in Egyptian splenomegaly.” 35 (9/10), 634–644.
- g. HALAWANI, A., ABDALLAH, A., DAWOOD, M. & SAIF, M., 1952.—“Further experience in the treatment of Bilharzia with miracil-D, nilodin, and lucanthone salicylate. Amelioration of the side-effects of miracil by belladonna and neo-antergan.” 35 (11/12), 735–748.
- h. SHAKIR, M. H., 1952.—“A spectrophotometric method for the assay of sodium-antimony III bis-pyrocatechin-di-sulphonate of sodium.” 35 (11/12), 749–762.
- i. ANTAKI, H., 1952.—“Polarographic determination of antimony blood levels in the stibophen therapy of schistosomiasis.” 35 (11/12), 772–785.
- j. NOR EL DIN, G. & EL TAMIMI, M., 1952.—“Hetrazan in the treatment of filarial manifestations.” 35 (11/12), 826–834.

(430b) At 125 autopsies on Egyptians with schistosomiasis the relative incidence of infection of the pelvic viscera was: seminal vesicles 95%, urinary bladder 88%, ureters 46%, prostate 18%, rectum 6%, testicle 3.7%. Clinically, schistosomiasis of the bladder and ureters overshadows that of the seminal vesicles. R.T.L.

(430c) If the blood in the pipette of the haemocytometer is ten times diluted with distilled water containing 1% of eosin, the red corpuscles are destroyed and the leucocytes are stained at the same time but they must be counted rapidly as they break up quickly scattering their eosinophil granules. The eosinophil percentages in various cases of helminth infections are tabulated. R.T.L.

(430d) In cases of hepato-lienal fibrosis due to schistosome infection the portal circulation time, as determined by the ether method, is reduced especially in ascitic cases. The derangement of the liver function is not correlated however with this time reduction. R.T.L.

(430e) Earlier reports of schistosome infection of the seminal vesicles are reviewed and three additional cases are reported. The vesicles may become markedly tumefied and glued together. In some cases they become fibrosed and calcified. Haemospermia originates in the seminal vesicles and not elsewhere. The effect on erection and ejaculation is described (nine photomicrographs). R.T.L.

(430f) Where there are extensive adhesions between the spleen and its bed, splenectomy for schistosome splenomegaly cannot be performed safely. Ligature of the splenic artery may be a useful alternative. R.T.L.

(430g) Sugar-coated tablets of miracil-D-HCl, in doses of 22 mg. per kg. body-weight daily for twelve days, produced cures in 70% to 80% of schistosomiasis cases, but 25% of them relapsed after two years. Uncoated tablets at the same dosage may produce apparent cures in six days but the side-effects are severe. Lucanthone salicylate (nilodin salicylate) in doses of 27 mg. per kg. body-weight for eight days is also effective but the side-effects are severe and hallucinations may occur. Miracil-D base in doses of 22 mg. per kg. body-weight for five or six days was also effective but the side-effects were excessive. Side-effects were

best minimized by giving miracil-D-HCl and an extract of belladonna in the proportion of 200 mg. to 10 mg. in sugar-coated tablets. Neo-antergan given simultaneously with miracil was less effective. 20 c.c. of 25% glucose should be administered intravenously for excessive hepatic or cardiac distress or for vomiting. R.T.L.

(430h) Spectrophotometric assay proved an ideal method of assessing the purity of samples of sodium-antimony III bis-pyrocatechin-di-sulphonate of sodium marketed as fouadin (15.6% to 16% trivalent antimony), stibophen and repodral (both of which contain 13.5% of antimony). It was noted that a photochemical reaction took place when a 10% solution of fouadin in water was kept in diffused daylight for four days. R.T.L.

(430i) The polarographic technique of microchemical analysis was used in a number of cases of schistosome infection to determine the antimony blood levels during and following Stibophen injections. The results are tabulated. R.T.L.

(430j) Hetrazan treatment, in average dose of 2 mg. per kg. body-weight for periods of 10 days to one month, resulted in moderate improvement in six out of 30 persons suffering from elephantiasis. Only the early or mild cases responded. In chyluria the results were disappointing. The drug proved useful in lymphangitis and elephantoid fever. A combination of hetrazan, penicillin and an anti-allergic drug should be given during these attacks. R.T.L.

431—Journal of the Science of Food and Agriculture. London.

- a. READ, W. H., 1952.—“The chemical control of glasshouse pests and diseases.” 3 (8), 337–342.

(431a) Most of Read's paper is concerned with insecticides, acaricides and fungicides, but he mentions D-D mixture for controlling root-knot, for which steam sterilization is often inefficient, pointing out that D-D is insufficiently fungicidal to replace steaming or formalin treatment. At Cheshunt, methyl bromide has proved effective against root-knot in tomato soils, but it is both expensive and highly toxic to man. B.G.P.

432—Journal of Science of the Hiroshima University. Series B, Division 1. (Zoology).

- a. OZAKI, Y., 1952.—“Lymph system of *Paramphistomum orthocoelium* and other two species.” 13 (1/20), 79–84.
b. OZAKI, H. & OZAKI, Y., 1952.—“A new gasterostome trematode *Bucephalopsis tylosuris* n.sp.” 13 (1/20), 85–90.

(432a) For the demonstration of the lymph systems of *Paramphistomum orthocoelium*, *P. gotoi* and *P. cervi*, Ozaki found that whole mounts stained satisfactorily with Orange G, and sections with either Heidenhain's iron haematoxylin and Orange G or with Mallory's triple stain. In all three species there are two separate, main, longitudinal canals which lie internal to the intestinal caeca. Round the oral sucker the canals branch to form eight large sacs; blind diverticula are given off from the whole length of the canal which are more numerous around the acetabulum and form a plexus around the excretory vesicle. In the canals are many nucleus-like bodies and Ozaki suggests that the lymph system may be formed by the fusion of gland cells. S.W.

(432b) *Bucephalopsis tylosuris* n.sp. was collected from the intestine of *Tylosurus coromandelicus* caught off the Pacific coast of Japan. The pharynx lies at the junction of the middle and posterior thirds of the body and the vitellaria are limited to the anterior third, thus distinguishing *B. tylosuris* from *B. gracilescens*, *B. haimeanus* and *B. ovarus* which it resembles in body shape. *B. tylosuris* is distinguished from *B. elongatus* by the position of the pharynx and extension of the cirrus pouch, and from *B. exilis* by the position of the vitellaria, ovary and cirrus pouch. S.W.

433—Journal of Small Animal Medicine. Inglewood, Calif.

- a. FARMER, H. H. & WITTER, W. F., 1952.—“Canine guinea worm (*Dracunculus insignis*) infestation. A clinical report.” 1 (4), 174.

(433a) Farmer & Witter briefly describe a case of infection with *Dracunculus insignis* in a dog at Rockford, Illinois, U.S.A. Five worms were extracted over a period of two years from (i) the left temporo-mandibular joint, (ii) near the left hock, (iii) the lateral surface of the right hock, (iv) the region of the right elbow and (v) the right shoulder. R.T.L.

434—Journal of the South African Veterinary Medical Association.

- a. MEESER, M. J. N., 1952.—“A preliminary survey of the endo- and ectoparasites of the impala—*Aepyceros melampus*.” 23 (4), 221–223.

(434a) As the impala, the commonest antelope in south eastern Transvaal, had been dying in large numbers several were shot for investigation. Those carcasses examined were heavily infected with *Pneumstrongylus calcaratus*, *Stilesia hepatica*, *Cooperia hepatica* and *Haemonchus contortus*. Other parasites found were *Haemonchus bedfordi*, *Longistrongylus sabie*, *Moniezia expansa*, *Cooperia hungi*, *Cooperiodes hamiltoni*, *Trichostrongylus colubriformis*, *Impalaia tuberculata*, *Oesophagostomum columbianum*, *Trichuris globulosa* and *Gaigeria pachyscelis*. The last named is a common parasite of sheep but has not been found previously in this area and is now recorded for the first time in game in South Africa. Meeser is of the opinion that the heavy mortality was due to intestinal parasitism. R.T.L.

435—Journal of Tropical Medicine and Hygiene.

- a. TREDRE, R. F., 1952.—“Observations on minor degrees of anaemia in East African workers.” 55 (7), 149–155.

(435a) In East Africa, native miners uninfected by malaria, schistosomiasis or hookworm and on a balanced diet attain European standards for the normal values for number of erythrocytes, quantity of haemoglobin and volume of packed red cells. *Schistosoma haematobium* infection is not necessarily accompanied by anaemia but with hookworm infection there is marked bone marrow erythropoietic activity which can maintain haemoglobin concentration and red cell counts at normal levels. Failure of compensation can readily occur if the diet borders on inadequacy. All Africans with hookworm eggs in the faeces should be given anthelmintic treatment irrespective of their haemoglobin concentration. R.T.L.

436—Journal of the Washington Academy of Sciences.

- a. YOUNG, R. T., 1952.—“The larva of *Hymenolepis californicus* in the brine shrimp (*Artemia salina*).” 42 (12), 385–388.
b. CABALLERO Y C., E. & GROCOTT, R. G., 1952.—“Helminths from the Republic of Panama: II. A new trematode from the intestine of *Philander laniger pallidus* Thomas and key to the species of the genus *Phaneropsolus* Looss, 1899 (Trematoda: Lecithodendriidae).” 42 (12), 388–391.

(436a) A remarkable *Cercocystis* in *Artemia salina* from Mono Lake and the Chula Vista salt pools in California is described and figured. It resembles *Cysticercus mirabilis* very closely and when fed to *Larus californicus* gave rise to *Hymenolepis californicus*. R.T.L.

(436b) In *Phaneropsolus philanderi* n.sp. from the woolly opossum, *Philander laniger pallidus*, in the Panama Canal Zone, the cirrus pouch is similar in size to that of *P. longipenis*. It is distinguished by the transverse position of the cirrus pouch, the position of the genital pore to the left of the posterior border of the pharynx and the equatorial situation of the genital glands. A key to the six species of *Phaneropsolus* is given. R.T.L.

437—Keio Journal of Medicine.

- a. FUEKI, K., 1952.—“On the modes of *Ascaris* infection in Japan.” 1 (1), 21-34.

(437a) In an investigation into the modes of infection with *Ascaris lumbricoides* in Japan, the important factors found were: (i) the soil of 66 out of 130 vegetable fields contained an average of 2.8 *Ascaris* eggs per 1 gm. of soil and 36.8% of the eggs were embryonated; (ii) *Ascaris* eggs are carried into the houses on the soles of shoes and by strong winds especially in the spring; (iii) in farm villages the eggs in the field may be carried by heavy rain into the drinking water or may be conveyed by the fingers to the mouth of those working in the fields; (iv) all vegetables, especially leafy kinds such as radish, tsukena, turnip leaves, hakusai and seakushina, are chiefly responsible for *Ascaris* infection especially in the spring and autumn.

R.T.L.

438—Khirurgiya. Moscow.

- a. SMIRNOVA, K. A., 1952.—[Ascariasis and its role in acute abdominal diseases.] Year 1952, No. 4, pp. 53-57. [In Russian.]
 b. DROZDOVA, O. S., 1952.—[Association of alveolar and unilocular echinococcosis of the liver.] Year 1952, No. 5, pp. 76-77. [In Russian.]

439—Klinicheskaya Meditsina. Moscow.

- a. MERGOLD, D. P., 1952.—[Unusual localizations of echinococcosis.] 30 (3), 86. [In Russian.]

440—Klinische Wochenschrift.

- a. DIETHELM, L., HEUCK, F. & KLOOS, K., 1952.—“Die Ascariasis und ihre Bedeutung für schwere hämorrhagische Darmveränderungen.” 30 (21/22), 510-511.

(440a) Diethelm *et al.* have shown by experiments on rabbits and guinea-pigs that whole *Ascaris* extract or long-standing *Ascaris* infection can produce a necrotic enteritis similar to that which has been observed in man. Their experiments have also demonstrated that the toxic secretions of *Ascaris* can give rise to an intestinal allergy which is analogous to other anaphylactic conditions.

A.E.F.

441—Lancet.

- a. CATCHPOLE, B. N. & SNOW, D., 1952.—“Human ectopic fascioliasis.” Year 1952, 2 (6737), 711-712.

(441a) An immature *Fasciola hepatica* was removed from a subcutaneous swelling, 1½ inches in diameter, overlying the ninth costal cartilage. On excision the mass consisted of fatty tissue containing pus-filled necrotic areas from one of which a *Fasciola hepatica* measuring 4 mm. × 2 mm. was expressed. The patient was an hotel housekeeper in Manchester. She had always lived in England except for a visit to Jersey during the year preceding her operation.

R.T.L.

442—Landwirtschaftliche Forschung.

- a. SCHLIEPER, C. & NIX, H., 1952.—“Über das Haften von Spulwurmeiern an Salat.” 4 (1), 74-80.

(442a) Schlieper & Nix emphasize the risk of eating lettuce to which *Ascaris lumbricoides* ova may be attached and consider that methods so far devised for removing the eggs have not been entirely satisfactory. They report on their own experiments as follows (the percentages show *Ascaris* ova removed from lettuce leaves after (i) two hours immersion, (ii) immersion and subsequent shaking, (iii) immersion and rinsing): tap water, (i) 15%, (ii) 49%, (iii) 72%; 0.4% solution of “FEWA”, a detergent used for clothes washing containing tetradecyl sodium sulphate, alkyl benzene sulphonate, and inorganic salts, (i) 34%, (ii) 96%, (iii) 100%; 0.2% “FEWA” plus 0.2% of a wetting agent, (i) 45%, (ii) 99%, (iii) 100%; 0.2% “Pril”

[an undefined wetting agent], (i) 48%, (ii) 100%. The authors conclude that a combination of suitable detergent and wetting agent provides a safe and efficient method of removing *Ascaris lumbricoides* ova from lettuce leaves. A.E.F.

443—Lunds Universitets Årsskrift.

- a. BRINKMANN, Jr., A., 1952.—“Reports of the Lund University Chile Expedition 1948–1949. 6. Some Chilean monogenetic trematodes.” N.F. avd.2, 47 (11), 26 pp.

(443a) Of the four species of monogenetic trematodes described in this paper, three are new, viz., *Microbothrium tollovi* n.sp. from *Mustelus edulus*, *Entobdella brattströmi* n.sp. from *Paralichthys adspersus*, and *Callorhynchicola branchialis* n.g., n.sp. from *Callorhynchus callorhynchus*. This new genus of Chimaericolidae has the clamps on each side alternating in cotylophore, two branched ovaries, an enormously expanded sack-like uterus. There is an absence of seminal receptacle and seminal vesicle, and of spines on the cirrus. The eggs are not shelled. R.T.L.

444—Maroc Médical.

- a. GAUD, J., 1952.—“Lois d'occurrence de l'éosinophilie dans les parasitoses animales.” 31 (322), 237.

(444a) In this brief note Gaud draws attention to a paper published by Bonnin & Moretti on eosinophilia caused by parasites [for abstract see Helm. Abs., 21, No. 260b]. He reproduces a table from it and is entirely in agreement with their contention that eosinophilia is caused only by those helminths which include a tissue phase in their life-history. S.W.

445—Médecine Tropicale. Marseilles.

- a. CASILE, M., 1952.—“Les formes génitales de la filariose de Bancroft en Guyane française.” 12 (3), 282–306.

446—Mededelingen. Directeur van de Tuinbouw. 's-Gravenhage.

- a. SEINHORST, J. W., 1952.—“Aaltjesziekten in tuinbouwgewassen.” 15 (8), 773–776. [English summary p. 776.]

(446a) Seinhorst gives general accounts of the diseases found in horticultural crops in Holland caused by *Aphelenchoides* spp., *Ditylenchus dipsaci*, *D. destructor*, *Heterodera* spp. and *Pratylenchus pratensis*. M.T.F.

447—Mededelingen van de Landbouwhogeschool en de Opzoekingsstations van de Staat te Gent.

- a. BRANDE, J. VAN DEN, KIPS, R. H., D'HERDE, J. & MOL, L. VAN, 1952.—“Onderzoek van aardappelvariëteiten en van Amerikaanse *Solanum*-soorten in verband met het aardappelcysten-aaltje *Heterodera rostochiensis* Wollenweber. 1ste mededeling.” 17 (1), 51–60. [English, French & German summaries pp. 58–59.]

(447a) About 70 varieties, 90 interspecific hybrids and a number of American *Solanum* species were tested for resistance to *Heterodera rostochiensis*. Details of the cyst infections observed are tabulated and charted. None of the American species proved resistant. The varieties 25 × 96/2 and 79 × 79/26 are described as particularly interesting, but research on the former has been abandoned on account of cultural defects; the latter, named Calliope, originated in 1944 by self-fertilization from Eigenheimer. R.T.L.

448—Medical Journal of Australia.

- a. ROW, P., 1952.—“Chyluria.” 39th Year, 1 (25), 847–849.

(448a) Chyluria is a late complication of filariasis resulting from obstruction of abdominal lymph channels and subsequent rupture of dilated vessels into the urinary passages. Usually

the microfilariae and eosinophilia have disappeared. Row finds that chyle often enters the collecting system of the kidney and can be seen spurting from a ureter on cystoscopic examination, and that irrigation of the renal pelvis on the affected side with 1% or 2% silver nitrate solution is more effective in relieving the symptoms than retrograde pyelography with sodium iodide solution. R.T.L.

449—Medical Journal of Malaya.

- a. EAGLAND, R. D., 1952.—“A report on anaemia in estate labourers, Malaya.” 7 (1), 36–38.

(449a) Routine examinations of patients in an Estate Group Hospital in the Selangor coast district of Malaya revealed that 4% to 7% showed clinical gross anaemia. In 450 persons on a nearby estate the haemoglobin, as determined by Tallqvist's scale, averaged 68%. The condition is attributed to a combination of hookworm infection and under-nutrition. Anthelmintic treatment and dietary correction with iron therapy gave very satisfactory results. Its total daily cost per patient was 91.63 cents and resulted in the addition of 1.48% of haemoglobin per day per patient. R.T.L.

450—Medicina. Revista Mexicana.

- a. VARGAS, L., 1952.—“Algunos aspectos de la ecología de las larvas de simúlidos en relación con la transmisión de *Onchocerca volvulus* en Chiapas.” 32 (657), 353–361. [English summary p. 361.]
 b. VARGAS, L., 1952.—“Nota sobre la biología de la microfilaria *Onchocerca volvulus*.” 32 (658), 396–397. [English summary p. 397.]
 c. NETTEL F., R., 1952.—“Oncocercosis. Revisión del problema entomológico de la oncocercosis y plan para la erradicación de *Simulium ochraceum* Walker.” 32 (659), 414–422; (660), 438–441; (661), 449–465; (662), 482–493; (663), 499–508.
 d. MARTÍNEZ BÁEZ, M. & PEÑA, R. T. DE LA, 1952.—“Modificaciones en la eosinofilia de los oncocercosis consecutivas a la administración de hetrazán.” 32 (663), 497–499.

(450a) Although the area of transmission of onchocerciasis in Chiapas is difficult to define, it appears to be limited mainly to altitudes of between 600 and 1,500 metres. Breeding of the simuliid vectors occurs in the upper waters of streams during the dry season from October to March. P.M.B.

(450b) When skin and excised nodules from cases of *Onchocerca volvulus* were transferred to various media most of the microfilariae emerged but did not survive long in non-isotonic media. They showed movement for about 30 minutes in double-distilled water and for a shorter period in a hypertonic solution. When microfilariae immobilized in the distilled water were transferred to 5% human serum-dextrose, movement was rapidly restored, and when put in a refrigerator at 4°C. the survival time was lengthened to six days. Isotonic solutions differed in their effect on the microfilariae: an isotonic solution of sodium chloride stimulated their emergence from the skin but they were paralysed by calcium chloride solution. The length of the microfilariae differed in different media: in distilled water it could be 280 μ , while in dextrose solution it reached only 180 μ . Vargas suggests that the different results of *in vitro* tests with drugs which have been reported may be due to failure to take into consideration the effect of osmotic pressure on the microfilariae. R.T.L.

(450c) In this series of articles Nettel summarizes (i) the entomological studies previously carried out by various workers in the onchocerciasis zone of Mexico, (ii) the physical geography of the two principal endemic regions, Oaxaca and Chiapas, (iii) the species of *Simulium* found in these two regions and in Veracruz, (iv) published work on the control measures undertaken against *Simulium* in various parts of the world since 1904, (v) his own experimental project against the larvae of *S. ochraceum* in the Río Huixtla system in Chiapas, (vi) an evaluation of the various control methods including, among others, the clearing of vegetation and the application of creolin, D.D.T. and gammexane, (vii) the method of applying larvicides to streams, and (viii) a scheme, with estimated costs, for a control campaign against *Simulium* larvae in Chiapas and Oaxaca. There is a bibliography of 103 references. P.M.B.

(450d) When hetrazan is administered to onchocerciasis patients there is a temporary decrease in the eosinophils in the blood, which is quickly followed by a rise to a higher level than before treatment. This rise is associated with the rapid death of microfilariae. R.T.L.

451—Medicina Colonial. Madrid.

- a. PRIETO LORENZO, A., 1952.—“El parasitismo intestinal por vermes entre la población huertana del Jarama (Madrid).” 20 (1), 10–19.
- b. FIDALGO DÍAZ, M. A., 1952.—“Diagnóstico de la hidatidosis.” 20 (1), 43–52.
- c. FIDALGO DÍAZ, J., 1952.—“Un caso personal raro de abdomen agudo por quiste hidatídico hepático.” 20 (2), 133–137.

(451a) The incidence of helminth infections in over 800 horticulturists in the Jarama Valley (Madrid) was found to be: *Ancylostoma duodenale* 22.5%, *Enterobius vermicularis* 21.87%, *Ascaris lumbricoides* 9.37%, *Trichuris trichiura* 3.75%, *Taenia saginata* 0.62%, *Hymenolepis nana* 0.25% and *Heterodera marioni* 2.25%. R.T.L.

452—Medicine and Laboratory Progress. Cairo.

- a. SULTAN, Z. M., 1952.—“The symptomatology of Egyptian splenomegaly. Its incidence and prevalence.” 13 (3), 63–73.

(452a) From a study of about 1,500 cases of splenomegaly in Egypt, Sultan found that its incidence in certain areas is proportional to the number of cases of *Schistosoma mansoni* infection but is governed by obscure endogenous factors. In schoolboys 13.8% had *S. mansoni* and 9.28% of these had splenomegaly, while in field workers who were more exposed to daily infection the incidence of *S. mansoni* was 40.5% and splenomegaly was present in 24.55% of these. R.T.L.

453—Medycyna Weterynaryjna.

- a. SZKUTNIK, Z., 1952.—“Badania nad wyjąławianiem wągrowatego mięsa świńskiego za pomocą peklowania. (Tymczasowe doniesienie.)” 8 (9), 398–401.
- b. TYMIĄK, M., 1952.—“Najważniejsze schorzenia prosiąt.” 8 (9), 409–411.
- c. ZALESKI, J., 1952.—“W sprawie artykułu J. Dziłińskiego o zwalczaniu chorób inwazyjnych zwierząt domowych.” 8 (9), 411–413.
- d. SZAFLARSKI, J., WIŚNIEWSKI, J. & DUBIEL, E., 1952.—“Rozpoznawanie wągrowskości u owiec za pomocą metod serologicznych i alergicznych.” 8 (12), 537–539.

(453a) Pickling in a 4.5% concentration of salt killed *Cysticercus cellulosae* in measly pork. The degree of salt concentration in the deepest part of the infected carcass, not the length of time in the brine, was the important factor in determining if cysticerci were killed. The sodium chloride concentration was ascertained by Volhard's method. As a test of viability by evagination of the scolices, a 50% solution of bile at 42°C. was used. Grenacher's alum carmine stained dead, but not living larvae, in one minute. C.R.

(453b) Among various diseases of pigs found in his district, Tymiak mentions helminthiasis caused by ascarids, strongyles and lungworms, and gives their treatment and prophylaxis. C.R.

(453c) Zaleski rebuts Dziłenski's view that the treatment of animals affected by parasites is wrong and pointless if the pastures and steadings are contaminated with eggs and infective larvae or where intermediate hosts are present as these are not affected by complete eradication by drugs or by purely symptomatic treatment. Treatment is an essential part in the control of helminthiasis of domestic animals. C.R.

(453d) The authors, employing serological and allergic methods in the diagnosis of *Cysticercus tenuicollis* in sheep, found that the complement fixation test was non-specific, that the precipitation test with antigen prepared from dried scolices from cysticerci (Trawiński's method) was positive in 93.3% and with the undiluted fluid from the bladder worm in 82%,

and that the intradermal test with this antigen was positive in 97.6% and with the fluid from the bladder in 86%. There was no correlation between the number of cysticerci present and the intensity of these reactions. C.R.

454—Memórias do Instituto Butantan.

- a. RUIZ, J. M., 1952.—“Contribuição ao estudo das formas larvárias de trematóides brasileiros. 2. Fauna de Santos, Estado de S. Paulo.” **24** (1), 17–36. [English summary p. 28.]
- b. RUIZ, J. M., 1952.—“Sobre um novo *Gnathostoma* assinalado no Brasil (Nematoda: Gnathostomatidae).” **24** (1), 37–44. [English summary p. 39.]
- c. RUIZ, J. M., 1952.—“Contribuição ao estudo das formas larvárias de trematóides brasileiros. 3. Fauna de Belo Horizonte e Jaboticatubas, Estado de Minas Gerais.” **24** (1), 45–61. [English summary p. 57.]
- d. RUIZ, J. M., 1952.—“Índices cercários específicos do *Schistosoma mansoni* verificados em Neves e Mariana, Estado de Minas Gerais.” **24** (1), 63–67. [English summary p. 65.]

(454a) Five species of cercaria are described from *Australorbis* sp. at Santos, São Paulo, Brazil, viz., those of *Schistosoma mansoni* and *Paryphostomum segregatum*, *Cercaria lutzii*, *C. santense* n.sp. and *C. hemiura* n.sp. The determination of two cercarial indexes, viz., global cercarial index (ICG) and specific cercarial index (ICE), are considered of importance in epidemiological investigations and are represented in two tables. R.T.L.

(454b) *Gnathostoma brasiliense* n.sp., described from the liver of *Lutreolina crassicaudata* from Sampaio Moreira, São Paulo, Brazil, resembles *G. didelphis* from which it is distinguished by the greater length of the body, of the spicules and of the cervical glands and the oesophagus and by the different arrangement and number of caudal papillae. R.T.L.

(454c) A high percentage of *Australorbis glabratus* in Minas Geraes contained cercariae of *Schistosoma mansoni*. Three other cercariae were present, including an echinostome cercaria (*Cercaria macrogranulosa* n.sp.), a xiphidiocercaria (*C. minense* n.sp.) and a cyclocoelid cercariaeum (*C. acaudata* n.sp.). There were also two metacercarial stages, *Metacercaria* sp. and *Tetracotyle* sp. Rapid examination for cercarial indexes in epidemiological surveys for *S. mansoni* are necessary because of the rapid decrease of infection which occurs when molluscs are removed from their natural habitat. R.T.L.

(454d) Ruiz tabulates the cercarial specific index of *Schistosoma mansoni* in naturally infected *Australorbis glabratus* in the Neves and Mariana localities in Minas Geraes, Brazil. R.T.L.

455—Mikrobiologiya. Moscow.

- a. LOITSYANSKAYA, M. S. & MOVCHAN, N. A., 1952.—[Interrelation of acetic acid bacteria and *Anguillula aceti*.] **21** (3), 330–335. [In Russian.]

(455a) Loitsyanskaya & Movchan state that *Turbatrix aceti* feeds on *Bacterium curvum* and prefers it to other bacteria. Metabolic products of the nematodes can be utilized by the bacteria. In the presence of living nematodes and the substances secreted by them large amounts of acetic acid are formed by the bacteria. J.B.G.

456—Mikrokosmos.

- a. REINHARDT, F., 1952.—“Eiablage beim Madenwurm.” **42** (3), 56–58.

(456a) Reinhardt has studied egg-laying in *Enterobius* by plunging gravid females into cold water for two minutes and then examining them on a slide. This greatly speeds up the process. He describes the rhythmic movements of the uterus which force the egg masses through the vagina. The integument of some worms burst at about the middle of the body and egg masses were forced out from the uterus which also ruptured. In one case the integument burst in three places. These damaged worms died very quickly. A.E.F.

457—Military Surgeon.

- a. RITCHIE, L. S., HUNTER, III, G. W., NAGANO, K. & LIN, S., 1952.—“Studies on schistosomiasis. IV. Two ointments for protection against schistosomiasis japonica.” 111 (2), 106–110.

(457a) Mice were afforded a considerable degree of protection against skin infection with *Schistosoma japonicum* by two ointments containing benzyl benzoate and designated N-I and N-II. The protection was not complete, however, for 15%–30% became lightly infected. The results compared favourably with those obtained with copper oleate. The benzyl ointments stained the clothing less and were more easily removed. N-I contained rosin 30%, benzyl benzoate 10% and alcohol-ether 60%; N-II contained raw rubber 2.5%, benzyl benzoate 10% and benzol 87.5%.
R.T.L.

458—Monatshefte für Veterinärmedizin.

- a. BORCHERT, A. & POLZIN, H., 1952.—“Praktische Erfahrungen in der Bekämpfung der Magenwurmkrankheit der Schafe.” 7 (14), 266–270.
b. HAUSMANN, W., 1952.—“Das Trichinoskop—ein Hilfsmittel für Massen-Schnellagglutinationen.” 7 (14), 274.

(458a) Borchert & Polzin have tested phenothiazine, Trichostrongylin and “Magenwurmtabletten” Marienfelde for their efficacy against stomach worms in sheep. Three heavily infected flocks, containing respectively 300, 400 and 150 sheep, were treated. Phenothiazine (two doses of 10–20 gm. according to age) was 100% successful against *Haemonchus*, and 66% successful against *Trichostrongylus*, *Ostertagia* and *Cooperia*. Trichostrongylin and “Magenwurmtabletten” (used in flocks where no *Haemonchus* was present) were both 50% successful against species of the other three genera. Treatment was in all cases associated with strict pasture and stall hygiene. It is concluded that a single suitable mass treatment of infected flocks will greatly reduce the worm burden.
A.E.F.

(458b) Hausmann describes a rapid agglutination technique for mass diagnosis of *Salmonella abortus-equi* infection in horses involving the use of a trichinoscope. Drops of serum are placed on the compressorium which is then heated over a flame, or in a drying oven, until the serum is completely dry. It is then examined. The method could probably be used for other bacteria.
A.E.F.

459—Münchener Medizinische Wochenschrift.

- a. MÜHLBAUER, H., 1952.—“Antistinerfolg und aplastische Anämie während einer Trichinoseepidemie.” 94 (21), 1066–1069.

(459a) Mühlbauer records an outbreak of trichinellosis which occurred in the spring of 1949 [place not stated] after consumption of pig meat which had not been subjected to meat inspection. Twenty cases were examined clinically and almost all showed the classical symptoms. Some 50% showed electrocardiographic changes indicative of myocardial injury. One elderly patient with particularly severe and intractable diarrhoea recovered spectacularly after parenteral administration of the antihistamine preparation “Antistin”. Another case, which developed aplastic anaemia with hypoproteinaemia and generalized oedema, ended fatally.
A.E.F.

460—Mycologia.

- a. DRECHSLER, C., 1952.—“Another nematode-strangulating *Dactylella* and some related hyphomycetes.” 44 (4), 533–556.

(460a) Drechsler describes and figures a new fungus, *Dactylella acrochaeta* n.sp., which captures nematodes in strangulating rings of hyphae. He mentions two other hyphomycetes, one capturing nematodes in delicate non-constricting rings which he says is *Arthrobotrys*-like, and the other, to which he assigns no name, ensnaring nematodes in thickish non-constricting rings.
J.B.G.

461—Natural History Miscellanea. Chicago.

- a. MCPHERSON, S. E. & TINER, J. D., 1952.—“A new nematode (*Rictularia microti*) from a vole on St. Lawrence Island, Alaska.” No. 108, 7 pp.

(461a) *Rictularia microti* n.sp. from *Microtus oeconomus inuitus* and *M. miurus paneki* in Alaska is intermediate between *R. coloradensis* and *R. onychomys* in maximum length of comb and has at least one more pre-vulvar cuticular process, the number being 32 or 33 instead of 29–31. There are 24–25 denticles in the female and 26 in the male. A female *Rictularia* sp. resembling *R. coloradensis* is reported from *Neotoma magister* in Indiana. R.T.L.

462—Naturalist. London.

- a. WHITEHEAD, H., 1952.—“The medicinal leech (*Hirudo medicinalis* L.) in Yorkshire—another record.” No. 843, p. 158.

(462a) Whitehead reports finding a specimen of *Hirudo medicinalis* feeding on a toad in a pond on Strensall Common, near York. P.M.B.

463—Nature. London.

- a. DE BONT, A. F. & DE BONT HERS, M. J., 1952.—“Mollusc control and fish-farming in Central Africa.” [Correspondence.] 170 (4321), 323–324.
 b. SPRENT, J. F. A., 1952.—“Anatomical distinction between human and pig strains of *Ascaris*.” [Correspondence.] 170 (4328), 627–628.
 c. ELLENBY, C., 1952.—“Resistance to the potato root eelworm, *Heterodera rostochiensis* Wollenweber.” [Correspondence.] 170 (4337), 1016.
 d. TOXOPEUS, H. J. & HUIJSMAN, C. A., 1952.—“Genotypical background of resistance to *Heterodera rostochiensis* in *Solanum tuberosum* var. *andigenum*.” [Correspondence.] 170 (4337), 1016.
 e. SHEPHERD, C. J., 1952.—“Tainting of tobacco by a dichloropropene-dichloropropane soil fumigant.” [Correspondence.] 170 (4338), 1073–1074.

(463a) Owing to their lethal effect on fishes, molluscicides cannot be utilized in clearing fish ponds and other waters in many parts of Africa where fish-farming produces the only source of animal protein available to the native population. From investigations at the Station de Recherches Piscicoles at Elisabethville, Belgian Congo, it has been found that a very palatable local fish, *Serranochromis* sp. (presumably *S. macrocephala*) feeds on different molluscan species. Out of 50 specimens examined, 72% had fed on snails, principally *Biomphalaria* and *Limnaea*. A pond of about a tenth of an acre in extent with a dense population of *Physopsis* and *Biomphalaria* was experimentally stocked with *S. macrocephala*. During the first month 87% of the fish captured had eaten snails but after two months this had fallen to 44%. In natural waters *Chrysichthys mabusi* feeds on molluscs and may prove of importance in large permanent waters. R.T.L.

(463b) Sprent finds that the denticles of the pig *Ascaris* form a conspicuous row of more or less equilateral triangles and their edges are straight. Those of the *Ascaris* of man are smaller and considerably less conspicuous, and have concave edges. (Eight photomicrographs illustrate the text.) R.T.L.

(463c) Ellenby has now tested over 1,200 lines belonging to more than 60 species of South American tuber-forming *Solanum* for resistance to *Heterodera rostochiensis*. Four tetraploids belonging to *S. tuberosum* subsp. *andigenum* which very readily cross with the domestic potato were shown in 1948 [for abstract see Helm. Abs., 17, No. 207a] to be apparently resistant lines. These results have now been confirmed. R.T.L.

(463d) Cuttings from plants grown from selfed seed of three clones of *Solanum tuberosum* subsp. *andigenum*, which is cultivated in the Andean regions, were grown in sandy soil heavily infested with *Heterodera rostochiensis*. The domestic variety *Eigenheimer* was used as control. Tabulated data show that 25 seedlings were apparently resistant and seven were susceptible. In the pots containing the controls and the susceptible seedlings the number of viable cysts

increased nearly ninefold, whereas with the resistant seedlings there was no increase. It is considered that these results provide evidence that resistance to the potato eelworm is inherited.

R.T.L.

(463e) During the curing of tobacco, which had been grown in Southern Rhodesia on soil injected with D-D fumigant, odours were apparent and persisted through the subsequent stages of processing. These odours occurred in about 5% of the crop and are now shown to be due to impurities in the fumigant. The contaminating substance in the green tobacco leaf was found to be about nine parts per million. It was absent from untainted tobacco. R.T.L.

464—Natuurwetenschappelijk Tijdschrift.

- a. DIERCKX, F., HAECK, M. C., LEFEVERE, S., STANDAERT, A. & CONINCK, L. DE, 1952.—“Over de invloed van enkele acridine-kleurstoffen op de vermenigvuldiging van *Anguillula silusiae* de Man (Nematoda).” 33 (8), 197–202. [English summary p. 197.]

(464a) *Anguillula silusiae* is quickly killed by acriflavine in concentrations of 1:5,000. Its growth is inhibited, and death before the adult stage is reached occurs in concentrations of 1:10,000 to 1:500,000. Although it may attain the adult stage in concentrations of 1:1,000,000 to 1:5,000,000, no new generation is produced. 5-monoaminoacridine and quinacrine are about ten times less active. It is suggested that infected green-house plants could be treated with a 1:5,000,000 solution of acriflavine.

R.T.L.

465—Nederlandsch Tijdschrift voor Geneeskunde.

- a. HULSHOFF, A. A., 1952.—“Ancylostomiasis.” 96 (22), 1316–1321.
- b. BERG, J. A. G. TEN, 1952.—“Filariasis loa. Behandeling met hetrazan.” 96 (39), 2411–2417. [English, French and German summaries pp. 2416–2417.]

(465a) Hookworm eggs were found in the faeces of 163 out of 1,669 repatriated patients seen at the Polyclinic in Amsterdam. The physical signs, symptoms and treatment of three of the patients form the basis of this clinical lecture.

R.T.L.

(465b) [A translation of this paper appears in *Docum. Med. geogr. trop.*, 1952, 4, 209–218. For abstract see No. 379c above.]

466—New England Journal of Medicine.

- a. SCOTT, R. A., JOHNSON, R. E. & HOLZMAN, D., 1952.—“Trichinosis with neurologic and mental manifestations.” 247 (14), 512–514.

(466a) Clinical details are given of three cases of trichinosis with varying degrees of involvement of the central nervous system. All the patients showed electrocardiographic abnormalities. Severe neurological defects may occur with but few of the classical symptoms and signs of trichinosis.

R.T.L.

467—New York State Journal of Medicine.

- a. GREENE, H. J., 1952.—“Human pinworm infestation successfully treated with terramycin hydrochloride.” 52 (6), 749.
- b. JACOBS, T. P., 1952.—“Trichinous myocarditis.” 52 (10), 1333–1335.
- c. SOLOMON, C., 1952.—“Response of trichiniasis to adrenocorticotrophic hormone (ACTH) therapy.” 52 (11), 1444–1446.
- d. TOMPKINS, V. & ROGERS, R. T., 1952.—“Bacillary agglutination reactions in trichinosis.” 52 (12), 1545–1546.

(467a) Terramycin, at the rate of an initial dose of 500 mg. followed by 250 mg. every six hours for five days, cured a case of enterobiasis in which previous gentian violet therapy had led to only a temporary improvement.

P.M.B.

(467b) A case of acute trichinosis with evidence of myocarditis is reported. As the patient was 58 years of age the possibility of an underlying arteriosclerotic heart disease could not be ruled out.

P.M.B.

(467c) Rapid and sustained improvement was noted after a 22-day course of ACTH therapy in a man suffering from trichinosis with severe involvement of the myocardium and diaphragm. P.M.B.

(467d) Two cases are reported in which significant agglutination with *Salmonella typhosa* and Proteus X 19 antigens occurred in the sera of two patients with trichinosis at an early stage. The reason for these false positive reactions was not discovered. P.M.B.

468—New Zealand Journal of Agriculture.

- a. ANON., 1952.—“Disease in the household poultry flock.” 85 (6), 487, 489.

469—New Zealand Journal of Science and Technology. B. General Research Section.

- a. JACKS, H., 1952.—“Soil disinfection. XIII: An injector for field fumigation.” 34 (3), 139–145.

(469a) [This technique was described in *Orchard. N.Z.*, 1952, 25 (3), pp. 9, 11, 13. For abstract see *Helm. Abs.*, 21, No. 253a.]

470—Nordisk Medicin.

- a. LANDTMAN, B., 1952.—“Blåbär mot oxyuriasis.” 47 (20), 673–675. [English summary p. 675.]

(470a) Children unsuccessfully treated for enterobiasis by standard methods were prescribed a diet of bilberries for three consecutive days. Of 30 patients, 26 became symptomless and worms disappeared from the stools. The four children in whom there was no apparent effect were all among those who had been treated at home. R.T.L.

471—North American Veterinarian.

- a. SULLIVAN, J. F. & SHAW, J. N., 1952.—“Lungworm in swine.” 33 (11), 784–785.
b. CROSS, R. F., WILLERS, E. H., GOOCH, J. M. & BONNET, D. D., 1952.—“Five previously unreported parasites in the Hawaiian Islands.” 33 (12), 849–850.

(471a) As the incidence of lungworm in pigs has reached 51.9% in Oregon, U.S.A., experimental infections were made to determine the effect which this infection has on growth and food utilization. *Eisenia foetida* were collected from the vicinity of the pens of a local slaughter-house and placed in soil to which large numbers of lungworm eggs had been added. Subsequent quantitative counts of 27 earthworms showed that the worms had acquired an average of 175.5 lungworm larvae. The infected earthworms were administered to young pigs and the weekly gains in weight were recorded. Death from verminous pneumonia occurred in two pigs which had received 200 and 400 earthworms respectively. The lungworms present were too numerous to count. In another pig about 7,000 were seen. As the weekly gain in weight was practically uniform in moderately infected, heavily infected and in the control pigs it is concluded that a moderate lung infestation is not necessarily detrimental. R.T.L.

(471b) The three helminths recorded for the first time from Hawaii in this report are (i) hydatid cysts in a cow imported from California, (ii) *Stephanurus dentatus* from the liver of cattle and from wild pigs and (iii) *Gongylonema pulchrum* from the oesophagus of a Barbary sheep in the Honolulu Zoo. P.M.B.

472—Notulae Naturae of the Academy of Natural Sciences of Philadelphia.

- a. MOORE, J. P., 1952.—“Professor A. E. Verrill's fresh-water leeches—a tribute and a critique.” No. 245, 15 pp.

(472a) Moore discusses critically the taxonomy of the 30 species and varieties of fresh-water leeches which appeared in Verrill's “Synopsis of North American Freshwater Leeches” (1874). The original descriptions have been analysed and compared with those of his types which survived and with other material. Several nomenclatural changes are proposed. R.T.L.

473—Pastoral Review. Melbourne.

- a. FETHERS, G., 1952.—“Phenothiazine risks in sheep.” 62 (8), 827–828.

(473a) In Australia drenching of lambs and weaners with phenothiazine may cause serious sickness or death from photosensitization. Losses do not appear to be related to dosage. A “pilot” test should be given to 5%–10% of the flock. Phenothiazine should not be given to young lambs running with ewes on pasture. Those three to four months old may be given a first treatment of 15 gm. It is pointed out that dosing in winter is much less valuable than supplementary feeding.

R.T.L.

474—Pemberitaan Balai Besar Penyelidikan Pertanian, Bogor.

- a. VECHT, J. VAN DER & BERGMAN, B. H. H., 1952.—“Studies on the nematode *Radopholus oryzae* (van Breda de Haan) Thorne and its influence on the growth of the rice plant.” No. 131, 82 pp. [Indonesian summary pp. 76–82.]

(474a) Van der Vecht & Bergman have made a major contribution to our knowledge of the rice root eelworm, *Radopholus oryzae* (formerly *Tylenchus oryzae*), and its effect on the host. They set out their methods of isolating the nematodes from roots (Baermann funnel technique), seedling inoculation techniques and methods used for staining the eelworms within roots. In the last mentioned they found Flemming’s Strong Solution gave the best results. In studying the life-history they found that adult eelworms of both sexes enter young roots through the epidermis at some distance from the tip and move in both directions so that older roots may exhibit them anywhere between base and tip. The minimum time of development from egg to adult is at least one month and the multiplication factor per generation may be as great as 13. Under alternative hosts they list more than 20 plants, mostly members of the Cyperaceae and the Gramineae, in the roots of which *R. oryzae* can live and reproduce. Observations are also presented on the life of the parasite in the soil and the authors found that the eelworms were still alive after 10 weeks in the absence of the hosts. They also give the results of a survey to determine the presence of the parasite in rice roots from various districts of Indonesia. Experimental trials and tests are then described which were designed to elucidate the effect of the eelworm on the host plant and the yield of rice. The results of these are given in considerable detail and are fully discussed. The parasite multiplies in the tissues of the root cortex which become discoloured. The growth of the plant is retarded and, in pot experiments, the primary effect of root infestation is a reduction in the rate of tillering most manifest about one to two months after transplantation of the seedlings. The infested plants then recovered and the newer roots were not so heavily infested as the older ones. Temporary reduction in tillering was found to be of ultimate benefit to the plant. The uninfested control plants tillered excessively and developed more shoots than could be supplied with the necessary nutrients in the later stages of growth. These effects are fully discussed in relation to the growth of the rice plant under natural conditions in the field and the complex problem of “mentek” disease of rice.

T.G.

475—Pflanzenarzt. Vienna.

- a. SCHREIER, O., 1952.—“‘Bärtige’ rüben.” 5 (8), 5.
b. BÖHM, O., 1952.—“Beachtet das Chrysanthemenälchen.” 5 (9), 4–5.

(475a) Schreier gives a popular account of the sugar-beet nematode, *Heterodera schachtii*, and associates the whiskery appearance of beet with the presence of the nematodes. Methods of spread and control of the parasite are referred to.

D.W.F.

(475b) Böhm gives an account of the symptoms of eelworm disease of chrysanthemums and the biology of the parasite, *Aphelenchoides ritzema-bosi*. He enumerates the cultural methods by which the nematodes may be prevented from spreading. Parathion has been used successfully at the concentrations used against scale insects, applied two or three times at

intervals of a few days. Pestox III H, Isopestox and Systox worked well as sprays at concentrations of 0.4, 0.1 and 0.05%. At the same concentrations, when watered on to the plants at the rate of 50 c.c. for three consecutive days, Systox was the best. M.T.F.

476—Pflanzenschutz. Munich.

- a. SPRAU, F., 1952.—“Der Kartoffelnematode (*Heterodera rostochiensis* Wollenw.) und seine Gefahren für den Kartoffelbau.” 4 (4), 41–46.
- b. WAGNER, F., 1952.—“Über Auftreten und Bekämpfung des Haferälchens (*Heterodera avenae*).” 4 (7), 83–85.

(476a) Sprau describes the symptoms and injury associated with *Heterodera rostochiensis* and gives an account of the life-history of the parasite. The host range of the worm is described and methods for detecting and estimating the degree of infestation are summarized. Based on arbitrary estimates of its multiplication rate the author calculates that the onset of disease would occur in 4–9 years after the appearance of the first cyst. D.W.F.

(476b) Wagner describes the occurrence, symptoms and life-history of cereal root eelworm on oats in Bavaria. The main host is oats but wheat, barley, rye and some grasses are also attacked. In areas where the disease is prevalent oats are a frequent crop. The author advocates lengthening the rotation by including more truck crops, suggesting in particular potatoes for seed. The locally grown oat varieties are very susceptible, while those showing resistance in north Germany (Adler and Heines Silber) are unsuited to Bavarian conditions. The yield of oats growing on infested land was increased from 740 kg. per hectare to 2,610 kg. per hectare by a calcium cyanamide dressing of 300 kg. per hectare. A yield of 3,550 kg. per hectare was obtained after a dressing of D-D mixture of 80 c.c. per sq. m. [= 71 gal. per acre]. The number of cysts per plant was reduced with D-D mixture from 3.3 to 0.33, but increased to 6.3 with calcium cyanamide which, however, greatly stimulated root growth. In the year following the treatments the oats on the D-D-treated plots still showed improvement over the controls. Those on the calcium cyanamide plots did not show a strikingly increased nematode attack, which suggests that some natural limiting factor may have checked the potential increase in the nematode population. M.T.F.

477—Pflanzenschutzberichte. Vienna.

- a. BÖHM, O., 1952.—“Beitrag zur Kenntnis der Verbreitung des Kartoffelnematoden (*Heterodera rostochiensis* Wt.) in Österreich.” 9 (7/10), 151–152. [English summary p. 152.]

(477a) Potato-root nematode has been found in Austria in the districts of Salzburg, Steiermark and Tirol, chiefly in gardens and allotments where potatoes have been grown frequently. M.T.F.

478—Phytopathology.

- a. TARJAN, A. C., 1952.—“Pathogenic behavior of certain root-knot nematodes, *Meloidogyne* spp., on snapdragon, *Antirrhinum majus* L.” 42 (12), 637–641.
- b. TARJAN, A. C., 1952.—“Comparative studies of some root-knot nematodes infecting the common snapdragon, *Antirrhinum majus* L.” 42 (12), 641–644.
- c. LOWNSBERY, B. F., STODDARD, E. M. & LOWNSBERY, J. W., 1952.—“*Paratylenchus hamatus* pathogenic to celery.” 42 (12), 651–653.

(478a) In view of Chitwood's recent revision of root-knot nematodes which has resulted in the recognition of the fact that the genus *Meloidogyne* contains five species and one variety, the effect of each of these different forms on a suitable host has been studied experimentally. The common snapdragon, *Antirrhinum majus*, was used as the test plant. Smaller root systems were formed in plants infected by *M. arenaria* and *M. javanica* than in those infected by the other species. The root-knot index for the *M. arenaria* plants was higher than that for the *M. javanica* plants. *M. hapla* had a low root-knot index but formed spherical galls smaller than those produced by other species. *M. incognita* and *M. incognita* var. *acrita* produced more females per inoculum unit than with other species. All the *Meloidogyne* species used

proved capable of infecting the five varieties of snapdragon tested. Tarjan considers it possible to differentiate the species by differences in development behaviour and on the measurements of the pathological response of snapdragons. R.T.L.

(478b) Tarjan has made comparative studies of the life-histories of four species and one variety of *Meloidogyne* in seedlings of *Antirrhinum majus* and *Lycopersicon esculentum* experimentally inoculated with *M. arenaria*, *M. hapla*, *M. javanica*, *M. incognita* and *M. incognita* var. *acrita*. In the snapdragon the life-cycle was slightly shorter than in the tomato but there were no basic outstanding differences in shape or behaviour at the various stages of development. *A. majus* is apparently an unsuitable host for *M. javanica* and *M. incognita* var. *acrita*, for larval penetration was followed by root necrosis and the galls decayed without producing eggs whereas numerous egg masses formed on tomatoes grown afterwards in the same soil. R.T.L.

(478c) Celery plants were grown in green-houses in fine sandy loam previously sterilized by methyl bromide and suspensions of *Pardtylenchus hamatus* were added. The plants showed stunting and chlorosis. The severity of the disease was correlated with the number of *P. hamatus* present in the soil. In control experiments in which *Fusarium* alone was present there was no stunting. The addition of *Fusarium* did not increase the degree of nematode stunting. It is concluded that *P. hamatus*, the larvae and adult females of which were observed feeding on the roots of the diseased plants, was the primary pathogen. R.T.L.

479—Plant Disease Reporter.

- a. SASSER, J. N., 1952.—“Studies on the control of root-knot nematodes (*Meloidogyne* spp.) with Systox spray (E-1053), an organic phosphate insecticide.” 36 (6), 228-233.
- b. BAZÁN DE SEGURA, C., 1952.—“The golden nematode in Peru.” 36 (6), 253.
- c. ANDERSON, C. G. & JENSEN, H. J., 1952.—“Root-lesion nematodes present in Christmas rose imported from Holland.” 36 (6), 253.
- d. TAYLOR, A. L., FELDMESSER, J. & FASSULIOTIS, G., 1952.—“An improvement in the method of searching for *Heterodera* cysts.” 36 (7), 269.
- e. PERRY, V. G., 1952.—“The northern root-knot nematode, *Meloidogyne hapla*, found in Florida and Alabama.” 36 (8), 335.

(479a) From experiments on tomato and cucumber plants, Sasser cannot recommend the use of Systox for the control of root-knot eelworms. An organic analysis of cucumber fruit taken from plants grown in soil treated at 19% concentration showed that 0.3 p.p.m. of an anticholinesterase inhibitor was present and indicated a definite potential toxicity to human beings. R.T.L.

(479b) *Heterodera rostochiensis* has been found in roots of the potato, *Solanum andigenum*, collected at Tarma, Peru. R.T.L.

(479c) *Pratylenchus* sp. has been discovered in the root system of Christmas rose (*Helleborus niger*) shipped from Holland to a nursery in Oregon. Live eelworms were present in the infected plants after storage for four months. Although the fungus *Cylindrocarpus* sp. was usually isolated from the diseased plants, the nematodes probably caused the primary damage. R.T.L.

(479d) Taylor *et al.* find difficulty in distinguishing *Heterodera* cysts from debris following extraction from soil by the primitive method of “roiling” with water in a bucket. They suggest the use of stains to colour the cysts, leaving the debris unstained. Janus green, brilliant green, malachite green and gentian violet are claimed to be suitable stains. D.W.F.

(479e) *Meloidogyne hapla* Chitwood, 1949, known as the northern root-knot nematode, is reported for the first time from States south of North Carolina. It has been found affecting tomatoes and gladioli in Florida and peanuts in Alabama. The infestation in Florida could have been introduced on plants and corms from the north. In Alabama, the infested peanuts were severely stunted and many died during a hot dry spell. M.T.F.

480—Plant Disease Reporter. Supplement.

- a. STANDEN, J. H., 1952.—“Host index of plant pathogens of Venezuela.” No. 212, pp. 59–106.
- b. SIANG, W. N., 1952.—“Host index to non-fungus diseases of plants in China.” No. 215, pp. 165–186.

(480a) This host index of plant pathogens in Venezuela is stated in the introduction to be far from complete. The only plant parasitic nematode listed is *Meloidogyne* sp. in *Brassica oleracea* var. *capitata*, *Dahlia* spp., *Dianthus* spp., *Glycine max*, *Lycopersicum esculentum*, *Nicotiana tabacum* and *Solanum tuberosum*. [The sources quoted for these records are (i) “El reconocimiento de las enfermedades de las plantas cultivadas en Venezuela, 1937–1941” by A. S. Muller in *Bol. Soc. venezol. Cienc. nat.*, **48**, May–July 1941, and (ii) Facultad de Ingeniería Agronomica de la Universidad Central, El Valle, Dto. Federal, Venezuela: “Mycological specimens collected by the Depto. de Fitopatología”.] R.T.L.

(480b) From this host index it appears that the only four plant-parasitic nematodes in China hitherto recorded are: *Heterodera marioni* (in 21 hosts), *Tylenchulus semi-penetrans* (in nine hosts), *Anguillulina* sp. (in one host) and *A. tritici* (in one host). R.T.L.

481—Polski Tygodnik Lekarski. Warsaw.

- a. CZYŻYK, A., 1952.—“Kilka uwag o działaniu poinsulinowych lekkich stanów niedocukrzenia w przebiegu włośnicy.” **7** (11/12), 315–318. [English summary p. 44*.]

(481a) Slight post-insulin hypoglycaemia was induced in three cases of trichinosis. After its interruption there was (i) a marked decrease in the eosinophils in the blood, (ii) an immediate analgesic effect lasting 4–5 hours and (iii) a return of the tendon reflexes of the lower limbs. The therapeutic value of these effects cannot be assessed from this limited number of cases. R.T.L.

482—Presse Médicale.

- a. AÇIKALIN, H. C., 1952.—“Ankylostomiase et asystolie.” **60** (39), 848.
- b. MÉRAB, A., MELKI, L., BROUNST, G. & SIOUFI, H., 1952.—“Quelques considérations sur une épidémie récente de trichinose au Liban-Nord.” **60** (53), 1131–1132.

(482b) No case of trichinosis had been reported in the Lebanon since 1894 until 1939 when, following an outbreak of 500 cases at Beirut, 25% of 3,000 pigs were found to be infected; 36% of the rats [number not stated] caught near the abattoir showed *Trichinella* larvae. In 1945, 36 cases occurred at the village of Araya and in 1951 a large proportion of 40 people at Bécharéh who had eaten meat from two infected pigs showed symptoms of the disease. P.M.B.

483—Proceedings. Association of Southern Agricultural Workers.

- a. GREENLEAF, W. H., 1952.—“Tests for resistance to nematodes in tomatoes.” [Abstract.] 49th Annual Convention (1952), p. 107.
- b. COOPER, W. E., 1952.—“Control of peanut root knot by soil fumigation and by crop rotation.” [Abstract.] 49th Annual Convention (1952), p. 136.
- c. HOLDEMAN, Q. L. & GRAHAM, T. W., 1952.—“The association of the sting nematode with some persistent cotton wilt spots in northeastern South Carolina.” [Abstract.] 49th Annual Convention (1952), p. 140.
- d. TODD, E. H., 1952.—“Further studies on the white tip disease of rice.” [Abstract.] 49th Annual Convention (1952), p. 141.
- e. HANSON, C. H., ALLISON, J. L. & CHAMBLEE, D. S., 1952.—“The performance of lespedeza strains on rootknot nematode infested soils in North Carolina.” [Abstract.] 49th Annual Convention (1952), pp. 176–177.

(483a) In five tests of a number of species of *Lycopersicum* and *Physalis*, which were grown in soil heavily infested with root-knot nematodes, none was found to be immune. A high degree of resistance was found in the seven strains of *L. peruvianum* tested, in *P. exocarpa* and in six tomato lines including a small-fruited Hawaiian tomato which was almost as resistant as *L. peruvianum*. M.T.F.

(483b) [This abstract appears also in *Phytopathology*, 1952, 42, 282-283. For abstract see *Helm. Abs.*, 21, No. 125c.]

(483c) [This abstract appears also in *Phytopathology*, 1952, 42, 283-284. For abstract see *Helm. Abs.*, 21, No. 125d.]

(483d) Todd found that the nematode causing white tip disease of rice, *Aphelenchoides oryzae* [now *A. besseyi* Christie, 1942], can survive in seed from panicles of severely affected rice plants for at least 24 months. Using staining techniques on all parts of the plant he found that the nematode is entirely an external parasite. M.T.F.

(483e) As a result of the finding of differences in yields of forage and in reaction to root-knot nematodes in different strains of lespedeza grown in North Carolina, the strain Rowan lespedeza has been increased and released. This is a Korean type resembling Commercial Korean in time of maturity and in seed characteristics but superior in resistance to root-knot and powdery mildew (*Microphaera diffusa*). Crosses between Rowan and later maturing strains have been carried as far as the F₄ generation. M.T.F.

484—Proceedings of the Indian Academy of Sciences. Section B.

- a. SAMUEL, M., 1952.—“A new species of coelomic trematode of the genus *Staphylorchis* from the tiger shark *Galeocерdo tigrinus* from Indian waters.” 36 (4), 169-179.

(484a) *Staphylorchis gigas* n.sp. from the coelom of *Galeocерdo tigrinus* in the Bay of Bengal resembles *S. cymatodes* but differs in general shape, greater size, structure of the male genital end organ, shape of ovary and vitelline follicles, and form of the excretory system. R.T.L.

485—Proceedings of the Royal Society of Medicine.

- a. BRIMBLECOMBE, F. S. W., KEECH, M. & LIGHTWOOD, R., 1952.—“Presumed dermatomyositis with cardiomegaly, trichiniasis and epilepsy.” 45 (6), 398-399.

(485a) The clinical history of an English child is briefly summarized. A diagnosis of cardiomegaly was excluded. The case was probably one of dermatomyositis with intercurrent trichinosis producing cerebral manifestations. R.T.L.

486—Proceedings. United States Livestock Sanitary Association.

- a. U.S. LIVESTOCK SANITARY ASSOCIATION, 1952.—“Report of Committee on Parasitic Diseases.” 55th Annual Meeting (1951), pp. 56-62.

(486a) As the importance of parasitic diseases of pigs in relation to the economy of production is not always appreciated, the United States Livestock Sanitary Association's Committee on Parasitic Diseases summarizes the available facts concerning (i) the effect of individual species on weight gains, (ii) the pathogenicity of the infections, (iii) the life-cycles of the most pathogenic species, (iv) the effect of parasites on the growth and food consumption of pigs, and (v) the unsolved problems in swine parasitology. The selection and development of tolerant or resistant strains of pigs is suggested. R.T.L.

487—Proceedings of the United States National Museum.

- a. ABBOTT, R. T., 1952.—“A study of an intermediate snail host (*Thiara granifera*) of the oriental lung fluke (*Paragonimus*).” 102 (3292), 71-116.

(487a) As an aid to parasitologists and public health workers, Abbott gives a detailed account of the gross morphology, external and internal anatomy, bionomics, taxonomy and ecological variations of *Thiara granifera*, a vector of *Paragonimus westermanii*, based on specimens collected on Guam Island, the Marianas and the Philippine Islands. It has become established in the Lithia Spring of Hillsborough County, Florida, where it is present in extraordinary numbers. Abbott has also seen specimens which had been acquired from dealers

in home aquaria in Silver Spring, Maryland. An aquatic plant and fish dealer in Tampa sells this mollusc as the "Philippine horn of plenty", as an oddity. It is recalled that *T. granifera* has been implicated as a molluscan intermediary of *Haplorchis taichui*, *Diorchitrema formosanum* and *Metagonimus yokogawai* in the Far East. Abbott found that 20% of the specimens which he collected in the Philippines were infected with unidentified heterophyid-like cercariae. R.T.L.

488—Proceedings of the Zoological Society of London.

- a. HILL, W. C. O., PORTER, A. & SOUTHWICK, M. D., 1952.—"The natural history, endoparasites and pseudo-parasites of the tarsiers (*Tarsius carbonarius*) recently living in the Society's menagerie." **122** (1), 79-119.
- b. ELKAN, E. & MURRAY, R. W., 1952.—"A larval trematode infection of the lateral line system of the toad *Xenopus laevis* (Daudin)." **122** (1), 121-126.
- c. ONABAMIRO, S. D., 1952.—"Four new species of *Cyclops* sensu lat. (Crustacea: Copepoda) from Nigeria." **122** (1), 253-266.
- d. MANN, K. H., 1952.—"A revision of the British leeches of the family Erpobdellidae, with a description of *Dina lineata* (O. F. Müller, 1774), a leech new to British fauna." **122** (2), 395-405.
- e. HILL, W. C. O., 1952.—"Report of the Society's Prosector for the year 1951." **122** (2), 515-533.
- f. PORTER, A., 1952.—"Report of the Honorary Parasitologist for 1951." **122** (2), 535-536.

(488a) The helminth infections of *Tarsius carbonarius* which were briefly recorded by Porter [see No. 488f below] are more fully annotated. R.T.L.

(488b) A number of the females of *Xenopus laevis* which are kept in pregnancy diagnosis stations all over the world die every year from the presence of strigeid larvae. In four females of *X. laevis*, Elkan & Murray have found strigeid metacercariae of the *Neascus* group encysted in the dermis below the lateralis sense organs. The lateralis plaques became swollen and blackened, the lateralis sense organs degenerated and the rest of the skin became pale. Infected toads died soon after the condition became apparent. R.T.L.

(488c) Guinea-worm is widespread in several parts of Nigeria. As there is no comprehensive literature on the cyclops of Nigeria, the 20 Nigerian species of the genus including four new forms are tabulated under nine subgenera and the four new species are described and figured. R.T.L.

(488d) In this paper, Mann gives an up to date revision of the British Hirudinea and their principal variations, particularly of the Erpobdellidae. Each genus and species is differentiated by the shape of the genital atrium. *Erpobdella testacea* and *Trocheta subviridis* are frequently associated with sewage. The division of *E. octoculata* into the two varieties *vulgaris* and *atomaria* should be abandoned as it has no taxonomic significance. A key is provided for the species of Erpobdellidae found in Britain. *Dina lineata* is recorded from Britain for the first time. R.T.L.

(488e) Hill, as Prosector to the Zoological Society of London, reporting on diseases due to animal parasites records (i) the prevalence of *Remicola* spp. in the kidneys of the penguins *Pygoscelis antarctica* and *Eudyptes chrysolophus*, and of other water birds; (ii) filariasis as the cause of death of a *Cercopithecus nictitans martini*; (iii) death of a *Colobus b. badius* from perforation of the gut wall due to *Oesophagostomum* sp.; (iv) coenuri in *Gazella subgutturosa* and *Cryptomys darlingi*; and (v) hydatids in *Sigmodon hispidus*. R.T.L.

(488f) As Honorary Parasitologist to the Zoological Society of London, Porter records that she has observed in the Zoological Gardens (i) eggs of *Hymenolepis* sp., *Trichuris* sp., hookworm (near *Necator*) and of a strongyle in the faeces of *Tarsius carbonarius*; (ii) *Bertiella* sp. and *Enterobius* sp. in a chimpanzee; (iii) *Enterobius* sp., *Trichuris* sp. and *Strongyloides* sp. in an orang-utan; (iv) *Oesophagostomum* sp. and *Enterobius* sp. in a gorilla; (v) *Trichuris* sp. and *Strongyloides* sp. larvae in *Cercopithecus preussi*; (vi) *Dactylogyrus* sp. in *Amphiprion ocellatum*; (vii) *Octobothrium salmonis* in a hybrid, *Salmo fario* × *Salvelinus fontinalis*, and in *Salmo irideus*; (viii) many subcutaneous encysted larval cestodes in the sea-horse, *Hippocampus ramulosus*; and (ix) immature nematode larvae in *Gadus pollachius*. R.T.L.

489—Protoplasma.

- a. SCHWÖBEL, W., 1952.—“Untersuchungen zur Granulabewegung im Ei von *Parascaris equorum* (Goeze) mit Hilfe des Zeitrafferfilms.” 41 (1), 21–56.

(489a) Schwöbel has studied the movement of protoplasm inclusions in intact cells, using as test material *Parascaris equorum* ova. By making use of the intermittent motion film technique he has been able to observe this very slow “granular movement” which is not otherwise distinguishable. Results are set out in very great detail and a review of earlier work is included. A.E.F.

490—Publicación. Escuela de Veterinaria. Universidad de Buenos Aires.

- a. MORINI, E. G., 1952.—“*Trichonema (Cylicocyclus) radiatum* (Looss 1900).” No. 5, 4 pp. [English summary p. 4.]

(490a) *Trichonema (Cylicocyclus) radiatum*, a rare parasite of horses, is recorded from the Argentine for the first time and is redescribed and figured. R.T.L.

491—Publications of the Institute of Marine Science, University of Texas.

- a. OLSEN, L. S., 1952.—“Some nematodes parasitic in marine fishes.” 11 (2), 173–215.

(491a) Of the 15 nematode species collected from marine fishes from the Atlantic and the Pacific Oceans, ten are new, viz., *Contracaecum melichthysi* n.sp. from *Melichthys buriwa*, *C. ogcocephali* n.sp. from *Ogcocephalus radiatus*, *C. chaunaxi* n.sp. from *Chaunax* sp., *Heterotyphlum eurycheilum* n.sp. from *Promicrops itaiara*, *Raphidascaris lutiani* n.sp. from *Lutianus analis*, *Terranova ginglymostomae* n.sp. from *Ginglymostoma cirratum*, *Ascarophis sebastodis* n.sp. from *Sebastodes caurinus*, *Cucullanus hansonii* n.sp. from *Balistes capistratus*, *C. longipapillatus* n.sp. from *Melichthys buriwa*. *Spirocamallanus* is a new genus for the 16 species of *Procamallanus* in which the buccal capsule lining has spiral thickenings, with *Spirocamallanus spiralis* (Baylis, 1923) n.comb. as type. *S. monotaxis* n.sp. is described from *Monotaxis grandoculis*. *Raphidascaris diodonis* is transferred to *Raphidascaroides*. *Porrocaecum trichiuri* and *P. secundum* are transferred to *Terranova*. The mature male of *Contracaecum histiophori* is now described. New hosts are recorded for *C. histiophori*, *C. aduncum*, *Raphidascaroides nipponensis* and *Cucullanus robustus*. R.T.L.

492—Recueil de Médecine Vétérinaire.

- a. CÈBE, J., 1952.—“Traitement de la syngamose aviaire.” 128 (4), 221–222.
 b. PETITDIDIER, 1952.—“Parasitose gastro-intestinale du cheval.” 128 (5), 282–284.
 c. GUILHON, J. & LOGÉ, G., 1952.—“Dioctophymose canine en France.” 128 (11), 665–673.

(492a) Cèbe has cured 17 turkeys of *Syngamus* infection by injecting intratracheally 0.5 c.c. of Lugol solution (one part Lugol diluted in two parts of water) on three consecutive days. R.T.L.

(492b) Petitdidier has observed that while flocks of sheep and herds of cattle on French farms are periodically dosed for internal parasites, the horses do not receive the same attention and are often treated only when they show clinical symptoms of massive infection especially with *Ascaris* and to a lesser degree with strongylids and *Oxyuris*. Clech's mixture of carbon tetrachloride 25 c.c., oil of turpentine 60 c.c., chloroform 30 gm. and castor oil 300 gm. gave excellent results in 98 cases. Fifteen days after this treatment, 5 cg. per kg. body-weight of phenothiazine was administered. R.T.L.

(492c) Twenty-five instances of *Dioctophyme renale* in dogs were recorded in France between 1610 and 1908. Their geographical locations are shown on a map and are tabulated. Several additional cases are now reported from around Saint-Nazaire (Loire-Inférieure). R.T.L.

493—Report. Department of Agriculture, New Zealand.

- a. FILMER, J. F., 1952.—"Animal Research Division. Parasitology." Year 1951-52, pp. 29-30.
- b. GREIG, A. M. W., 1952.—"Horticulture Division. Eelworm control in tomato houses." Year 1951-52, p. 76.

(493 a & b) J. F. Filmer's report on the work of the Animal Research Division states that no evidence of *Trichinella* infection was found in 1,300 samples of diaphragms from pigs sent to bacon factories and abattoirs from several areas in the North Island and that a number of phenothiazine tablets sold in New Zealand broke down very slowly after dosing and, in the laboratory, only disintegrated after 15 to 20 minutes at room temperature. Some of the hard tablets failed to disintegrate completely even after 50 days in water in the incubator. Tablets which fail to disintegrate in cold water within 20 minutes should be discarded. In A. M. W. Greig's report on the Horticultural Division, it is stated that effective control of eelworm in tomato houses was obtained by using Larvacide, Larvacide plus Dowfume 85, and Larvacide plus Dowfume 40 and Shell D.D. R.T.L.

494—Revista Argentina de Agronomía.

- a. MARCHIONATTO, J. B., 1952.—"Comentarios sobre últimos trabajos relacionados con el nematode *Tylenchulus semipenetrans*." 19 (3), 184-185.

(494a) This is a short review of some recent papers on the citrus root nematode. M.T.F.

495—Revista Brasileira de Biologia.

- a. FREITAS, J. F. TEIXEIRA DE & MACHADO DE MENDONÇA, J., 1952.—"*Aprocta pyrrhurae* n.sp. (Nematoda, Filarioidea)." 12 (4), 385-388.

(495a) Freitas & Machado de Mendonça describe and figure *Aprocta pyrrhurae* n.sp. from the abdominal cavity of *Pyrrhura cruentata* from Espírito Santo, Brazil. It is distinguished from *A. microanalisis*, *A. proctata* and *A. colaptidis* by the absence of an anal orifice in the female and from other species of the genus (except *A. anthicola* on which no literature could be obtained) by the form of the male tail. It is suggested that *A. noctuae*, which was redescribed by Chabaud in 1951 [for abstract see Helm. Abs., 20, No. 176d], should be included in *Aproctiana* as the females are amphidelphic. P.M.B.

496—Revista Clínica Española.

- a. TOLOSA, E. & DURAN, F., 1952.—"Cisticercosis del IV ventrículo." 45 (4), 243-248. [English, French & German summaries p. 248.]
- b. VEGA FERNÁNDEZ, S. DE, 1952.—"El neumotórax hidatídico. Aportación de un caso clínico con rotura simultánea en pleura de dos quistes." 45 (4), 260-266. [English, French & German summaries p. 266.]

(496a) A patient surgically treated for cysticerciasis of the fourth ventricle lived for two years after the operation and there was complete remission of neurological and clinical symptoms. Nineteen cases recorded in the literature are briefly discussed and tabulated; they indicate that surgical treatment has so far been successful in about 50% of cases. P.M.B.

497—Revista de la Facultad de Medicina. Bogotá.

- a. HELO, J. E., 1952.—"Investigaciones de parásitos y cuerpos extraños en la luz del apéndice. 153 observaciones." 20 (7), 399-412.
- b. HELO, J. E., 1952.—"Las tenias. Las teniasis. Tratamiento." 21 (1), 19-25.
- c. MUÑOZ RIVAS, G., 1952.—"Coccidiosis y distomatosis humanas en Colombia." 21 (2), 47-58.

(497a) In scrapings of the mucosa of 153 inflamed appendixes helminth eggs were found on the following occasions: *Ascaris* 35, hookworm 5, *Trichuris* 29, *Enterobius* 1, *Taenia saginata* 1. *Strongyloides* embryos were seen twice, adults of *Trichuris* twice and of *Enterobius* thrice. R.T.L.

(497c) Muñoz Rivas reports the finding of *Fasciola hepatica* eggs in the faeces of five members of a Colombian family in whom the eosinophil counts were respectively 36%, 45%, 47%, 48% and 72%.
R.T.L.

498—Revista Ibérica de Parasitología.

- a. LÓPEZ-NEYRA, C. R., 1952.—“*Gyrocoelia albaredai* n.sp. Relaciones con Tetrabothriidae y Dilepididae.” 12 (4), 319-344. [English summary p. 337.]

(498a) *Gyrocoelia albaredai* n.sp. is described and figured from *Himantopus himantopus* from Laguna del Duero (Valladolid). In the presence of small auricular appendices it departs from the accepted generic diagnosis but it may, however, prove to be identical with *G. perversae* which occurs in this host in Switzerland. The relationship of *Gyrocoelia* to Tetrabothriidae and Dilepididae is discussed. A table sets out the chief differences between the eight species of *Gyrocoelia*, three species of *Angularella* and two species of *Pseudangularia*.
R.T.L.

499—Revista Médica de Chile.

- a. SESNIC, R. & KRALJEVIC, R., 1952.—“Tratamiento de la triquinosis con cloromicetina.” 80 (4), 240-241.

(499a) Four cases of severe trichinosis, including two with serious involvement of the nervous system, were given daily doses of 3 gm. of chloromycetin until the total reached 24 gm. to 37.5 gm. In all the cases there was a fall of temperature and an improvement in all other symptoms on the 4th or 5th day.
R.T.L.

500—Revista de Medicina Veterinaria. Buenos Aires.

- a. SZIDAT, L. & NANI, A., 1952.—“Nota preliminar sobre una parasitosis grave de los pejerreyes producida por larvas de trematodos de la familia Diplostomidae Poirier 1886 que destruyen el cerebro de los peces.” 34 (1), 9-14.

(500a) Lothar Szidat & Nani report that the death of enormous numbers of fresh-water fish of the genus *Basilichthys* in Lake Pellegrini and in the rivers Limay and Neuquén in Argentina was due to the presence of large numbers of trematode larvae in the brain. In Lake Pellegrini 60% of the fish were very small and emaciated, the digestive tract was practically empty and the brain was destroyed to varying degrees. The larvae are named *Tylodelphys destructor* n.sp. and *Diplostomulum mordax* n.sp. The former predominated in fish from Lake Pellegrini and the latter was found almost exclusively in those from the Rio Limay, this distinction probably being due to the distribution of the different definitive hosts. The development of *D. volvens* and *T. rhachiaea*, previously described from Europe, is summarized as it is almost certain that it is similar in these two new species. The definitive host of *D. mordax* appeared to be *Phalacrocorax violaceus violaceus* but that of *T. destructor* is unknown.
P.M.B.

501—Revista de Medicina Veterinária. Lisbon.

- a. ALVES DA CRUZ, A., LINO DE SOUSA & CABRAL, A., 1952.—“Índice parasitário do *Felis (Felis) catus domesticus* da cidade de Lisboa.” 47 (341), 142-152. [English & French summaries p. 152.]

(501a) The helminths found in stray cats in Lisbon were *Dipylidium caninum*, *Taenia taeniaeformis*, *Toxocara mystax*, *Toxascaris leonina*, *Ancylostoma caninum* and *Ollulanus tricuspis*.
R.T.L.

502—Revista de Medicina Veterinaria y Parasitología. Caracas.

- a. CABALLERO Y C., E., 1952.—“Revisión de los géneros y especies que integran la familia Acanthocolpidae Lühe, 1909. (Trematoda: Digenea).” 11 (1/2), 1-231.

(502a) This memoir of 225 pages supplements a preliminary note of the same title published in 1952 as a separate pamphlet by the Helminthological Laboratory of the Institute

of Biology of the National University of Mexico [see Helm. Abs., 21, No. 162]. It provides detailed descriptions and keys for each of the subfamilies, genera and species of Acanthocolpidae. Most of the species are illustrated. There are two host lists, one giving the parasites under each host species, the other the geographical distribution of the host in which each parasite species was found. There is a bibliography and a useful subject index. R.T.L.

503—Revista Paulista de Medicina.

- a. AUN, R. A., 1952.—“Apendicite esquistossomótica.” 40 (4), 282–284. [English & German summaries p. 284.]
- b. FERREIRA, J. M. & MEIRA, J. A., 1952.—“Três casos de esquistossomose mansoni procedentes do Interior do Estado de São Paulo (Ourinhos, Palmital e Ipaçu). Foco autóctone na cidade de Ourinhos.” 41 (1), 15–18.

(503a) Aun reports a third instance of schistosome appendicitis from São Paulo, and describes the histology of the granuloma which he considers to be allergic. R.T.L.

(503b) Three cases of schistosomiasis mansoni are reported from the interior of the State of São Paulo, one from Ourinhos (a new focus, and the first to be discovered in this plateau area) and the other two from Ipaçu and Palmital respectively. As there is an increasingly large migration of population to this area from parts of Brazil where the incidence of schistosomiasis is high, and in view of the probable wide distribution of potential Australorbis vectors, it is thought that the infection will become more widespread. P.M.B.

504—Revista de Sanidad e Higiene Pública. Madrid.

- a. DURICH, J., 1952.—“La triquinosis en la provincia de Valencia.” 26 (1/2), 47–53.

(504a) Durich reports three epidemics of a very mild form of trichinosis, two of which occurred during 1945 and one in 1950 in the province of Valencia. The symptoms were very slight and difficult to diagnose: oedema of the eyelids and of the face generally was the most characteristic manifestation; digestive disturbances rarely occurred. The symptomatology of all recorded cases in each epidemic is tabulated. P.M.B.

505—Revue de l'Agriculture. Brussels.

- a. BRANDE, J. VAN DEN, 1952.—“La recherche sur les nématodes.” 5 (9), 997–1001.

(505a) As part of the scheme for technical assistance under the E.C.A. and M.S.A. van den Brande has visited the U.S.A. and describes the situation there as regards research on nematode pests of crops. He mentions the most important nematode parasites and describes the methods and chemicals used in soil fumigation, including the economic aspects of the various treatments. He indicates the lines along which research is being carried out in the U.S.A. Comparing the situation in America with that in Belgium he points out how much remains to be done in the field of harmful nematodes and their control. M.T.F.

506—Revue Horticole Suisse.

- a. ZOBRIST, L. & BOUCHET, R. L., 1952.—“La lutte chimique contre la maladie vermiculaire du chrysanthème.” 25 (6), 175–182.

(506a) Experiments are described as a result of which it is claimed that chrysanthemum eelworm can be completely controlled by applications of Aralo, a proprietary substance containing 15% parathion. It is more effective in the form of a wettable powder than as an emulsion and is used at the rate of 0.2% Aralo. To free chrysanthemum stools from eelworm one or two treatments are given when the shoots are 3 cm. high: plants under glass should have two or three treatments at intervals of 3–4 weeks until a month before flowering; plants in the open can be kept free from eelworm, even in wet seasons, by monthly applications of

0.2% Aralo. The substance is also effective against *Aphelenchoides fragariae* in begonia and saintpaulia, and *Ditylenchus dipsaci* in phlox and forced chives. M.T.F.

507—Revue de Médecine Vétérinaire.

- a. EUZÉBY, J., 1952.—“Parasites et maladies parasitaires du porc.” 103, 714-737.

(507a) Euzéby summarizes the cutaneous, gastric, intestinal, respiratory, hepatic, nervous and haemolytic syndromes of parasitism in pigs. R.T.L.

508—Revue Romande d'Agriculture, de Viticulture et d'Arboriculture.

- a. SAVARY, A., 1952.—“Les nématodes nuisibles aux cultures de céréales.” 8 (5), 35.
 b. SAVARY, A., 1952.—“Le nématode doré de la pomme de terre, *Heterodera rostochiensis* Wollenweber.” 8 (6), 44-46.
 c. SAVARY, A., 1952.—“Une espèce de nématode nuisible aux cultures de tabac en Suisse romande: *Heterodera marioni* Goodey.” 8 (11), 89-90.

(508a) Savary gives a popular account of the attack by *Ditylenchus dipsaci* on cereals. He mentions something of its Swiss distribution, some of the ways in which it is spread and refers to the difficulties of control. J.B.G.

(508b) The potato root eelworm has not yet been found in Switzerland, but has been recorded from several neighbouring countries. Savary gives a brief general account of the parasite, its life-history, spread, symptoms, and control by rotation, so that Swiss farmers may be forewarned. B.G.P.

(508c) Savary has found root-knot nematode attacking tobacco in the valley of the Broye and the Rhône plain. The disease is local and not severe in the former area where the variety of tobacco is Mont-Calme brown. In the Rhône plain, on the variety Mont-Calme yellow, the damage is more marked and the roots severely galled. M.T.F.

509—Rhodesia Agricultural Journal.

- a. COCKBILL, G. F., 1952.—“The root knot eelworm.” 49 (5), 303-312.

(509a) With the growth of intensive cultivation in Southern Rhodesia the root-knot eelworm has become almost the most important persistent pest with which market gardeners, potato growers and tobacco farmers have now to contend. It is more troublesome in sandy soils than in heavy soils with clay subsoil but is widely distributed in the colony. The life-history of the parasite, the symptoms of attack, its host plants and the sources of infection are briefly outlined. The control measures recommended combine (i) selection, for seedbeds or gardens, of sites likely to be free from infection: the lower areas of land on a slope should be cultivated first; (ii) provision of eelworm-free water from a borehole or deep well; (iii) application of manures, but only where growing conditions are likely to result in plant starvation; (iv) removal and destruction of infected plant material; (v) soil fumigation—“W.85”, which contains 85% ethylene dibromide, is more effective volume for volume than D-D but is slightly more expensive; (vi) electrical treatment of infected soil—this is still under investigation. R.T.L.

510—Rhodesian Farmer.

- a. ANON., 1952.—“Towards better tobacco—No. 5. Plant early: beet eelworm.” October 22, p. 7.

(510a) In Southern Rhodesia it pays to plant tobacco early to avoid loss from eelworm infection. Daulton has demonstrated that from January to March, when the soil is damp, large numbers of eelworms live in the top 8-10 inches of the soil, whereas they are absent from the upper layers during the rest of the year. R.T.L.

511—Rhodesian Tobacco Journal.

- a. NEETHLING, L. J., 1952.—“Control of eelworm.” 4 (5), 71–73, 105.

(511a) Eelworm diseases have recently become a serious menace, especially to potatoes, tomatoes and other vegetables, in Southern Africa. Soil under irrigation is very prone to become badly infested as the larvae are easily transported by water. All the canals on irrigated land should be constructed of cement and raised above ground level to prevent the influx of storm water, and where water must be conducted in earthen furrows over land known to be infected, the construction of a settling dam is advisable to allow the eelworms to sink before the water is used for irrigation. Although rotation with resistant crops can reduce the eelworm population considerably, it is costly as the growing of these resistant crops on irrigated land gives poor cash returns. Repeated ploughing during the dry seasons also reduces the eelworm populations in the upper layers of the soil but this also is expensive and may seriously affect the soil structure. By fumigation of infested soil the steady build-up of eelworm populations can be prevented. It is claimed that for this purpose soil fumigants have proved effective and economical. R.T.L.

512—Rice Journal. New Orleans.

- a. ATKINS, J. G., 1952.—“Studies of white tip of rice and its control in Louisiana.” 55 (11), 8–10, 31.

(512a) After reviewing the symptoms of white tip disease of rice, the life-history of the causal nematode and published control measures, Atkins gives briefly the results of tests of a number of chemicals used for killing the nematodes on rice seed. Four experimental chemicals from the Stauffer Chemical Company were promising: of these N-244 and N-245, used as a dust or slurry at 2–4 oz. per bushel of seed were the most effective and least phytotoxic. N-244 gave effective control of white tip symptoms in two small plot tests. M.T.F.

513—Rivista Italiana d'Igiene.

- a. MAGAUDDA-BORZI, L., 1952.—“L'attività dei sali di Roussin (nitrosolfuri di Fe) sulle uova e sulle larve rhabditoidi di *Ancylostoma caninum*.” 12 (3/4), 124–131. [English summary p. 131.]

(513a) The development of *Ancylostoma caninum* is inhibited by a solution of 1:50,000 of Roussin's salts ($M[Fe_4(NO)_7S_3]$) in distilled water but in the presence of faecal matter a concentration of 1:40,000 is necessary. The rhabditiform larvae in distilled water are immobilized by a solution of 1:1,000,000 in 24 hours. R.T.L.

514—Rivista di Parassitologia.

- a. RICCI, M., 1952.—“Ricerche parassitologiche nell'isola d'Ischia. III.—Il parassitismo intestinale nella popolazione infantile.” 13 (4), 265–276. [English summary p. 276.]
 b. THÉODORIDÈS, J., 1952.—“Les parasites et commensaux des Geotrupini (Coleoptera Scarabaeidae Geotrupinae).” 13 (4), 277–298. [English & Italian summaries pp. 296.]
 c. PELLEGRINI, D., 1952.—“Individuato nella *T. jakhalsi* Ortlepp 1938, il cestode adulto del *Cysticercus madoquae* Pellegrini 1950.” 13 (4), 299–306. [English summary p. 306.]
 d. ZAFFINO, C. & RASPA, G., 1952.—“L'ossiturosi negli individui adulti.” 13 (4), 307–308. [English summary p. 308.]
 e. LIPPARONI, E., 1952.—“Presenza del *Bulimus abyssinicus* (V. Martens) nella zona del medio Uebi-Scebeli e rilievi sul suo habitat locale.” 13 (4), 309–314. [English summary p. 314.]
 f. RIZZOTTI, G., 1952.—“Risultati della cura con violetto di genziana per via orale nella infestazione da *Strongyloides stercoralis*.” 13 (4), 315–320. [English summary p. 320.]

(514a) The incidence of helminth parasitism in the island of Ischia is indicated by the results of faecal examinations made in the communes of Barano, Forio and Porto d'Ischia on 275 children between one and 12 years of age, viz., *Ascaris lumbricoides* 39.64%, *Enterobius vermicularis* 6.18%, *Trichuris trichiura* 80.73%, *Necator americanus* 0.36% and *Hymenolepis nana* 2.18%. One instance of *Taenia saginata* infection was diagnosed by the Scotch cellophane tape method. R.T.L.

(514b) This account of the parasites and commensals of the Geotrupini is based partly on published results and partly on an examination of several hundred Geotrupini collected chiefly from the Pyrénées-Orientales. The cestode larvae mentioned are *Choanotaenia infundibulum*, *Hymenolepis serpentulus*, *H. furcata*, *H. diminuta* and *H. microstoma*. The nematodes are *Allantonema sylvaticum*, *Agamonematodum geotrupis*, *Spirocerca lupi*, *Physocephalus sexalatus*, *Ascarops strongylina* and *Gongylonema mucronatum*. In addition 7 species of *Bunonema*, 12 of *Rhabditis*, 6 of *Diplogaster*, one *Diploscapter*, one *Acrobeles*, one *Tylopharynx*, one *Rhabditolaimus* and one *Agamonema* are listed as commensals living on the body surfaces.

R.T.L.

(514c) From a comparative study of the scolex of *Cysticercus madoquae* and *Taenia jakhalsi*, and by experimental infection, Pellegrini shows that the former is the larval stage of the latter.

R.T.L.

(514d) A single examination by the Graham cellophane technique of 300 adult patients in the Pianosa Sanatorium showed that 15.33% were infected with *Enterobius vermicularis*.

R.T.L.

(514e) In the region of central Uebi-Scebeli in Somaliland where vesical schistosomiasis is widespread the occurrence of *Bulinus abyssinicus* is reported.

R.T.L.

(514f) After the oral administration of 3 gm. of gentian violet, in doses of 6 cg. thrice daily, 25 out of 37 cases of *Strongyloides stercoralis* were positive. After a second course of treatment 15 of the 25 positive cases still showed infection. Of the 15, nine remained positive after a third course and five resisted a fourth course of treatment.

R.T.L.

515—Schweizer Archiv für Neurologie und Psychiatrie.

- a. LOTMAR, F., 1952.—“Zur Frage der Verursachung von Herdsymptomen des Grosshirns durch Ascaridiasis.” **68** (2), 316–318.

(515a) Lotmar supplements his earlier account [see Helm. Abs., **20**, No. 566a] of two cases where epileptic symptoms were believed to have been caused by local reactions to Ascaris larvae in the brain and gives further details of one of the cases.

A.E.F.

516—Schweizer Archiv für Tierheilkunde.

- a. BOUVIER, G., BURGISSER, H. & SCHNEIDER, P. A., 1952.—“Observations sur les maladies du gibier, des oiseaux et des poissons en 1951.” **94** (7), 475–479.
 b. KREIS, H. A., 1952.—“Helminthologische Untersuchungen in schweizerischen Tierpärken und bei Haustieren.” **94** (8), 499–522; (9), 556–583. [English, French & Italian summaries pp. 581–582.]

(516a) Helminth infections were present in specimens of ibex, deer, chamois, roebuck, hare, squirrel and carrion crow received at the Institut Galli-Valerio in 1951. Pulmonary infections in the roebuck were often severe. The only specific diagnoses given are *Fasciola hepatica* in an ibex, and *Syngamus trachea* which caused death in a carrion crow.

R.T.L.

(516b) Kreis has examined for helminths, over a number of years, animals from zoos and circuses (including fishes, reptiles, birds, and mammals) and also domestic animals from various parts of Switzerland. A total of 1,256 animals representing 217 species has been examined and lists are given of the host species and of the helminths recovered. For a few of the wild animals and for most of the domestic animals, individual host lists are included. The eleven new species discovered during the course of the investigation have already been described in the literature. Kreis also discusses in some detail the bionomics of the helminths and their host relationships. The final twelve pages of the paper are devoted to illustrated descriptions of the ova (and in one or two cases of the larvae) of the more important helminths of domestic animals together with keys for their identification.

A.E.F.

517—Schweizerische Gärtnerzeitung.

- a. ZOBRIST, L. & BOUCHET, R., 1952.—“Chrysanthemen-Älchen; ein gelöstes Problem.” 55 (15), 2-5.

(517a) Zobrist & Bouchet report a satisfactory means of freeing chrysanthemums of leaf eelworm by the use of the proprietary substance, Aralo. This is a suspension containing 15% active parathion: used as a spray at 0.2% it is superior to parathion dust or emulsion. Plants were kept free from eelworm symptoms during a wet summer by three sprayings at intervals of 3-5 weeks. Two treatments at an interval of three weeks halted an established infestation. No effects on growth were observed. Aralo was also effective in controlling *Aphelenchoides olesistus* [*A. fragariae*] in begonia and saintpaulia and gave encouraging preliminary results with *Ditylenchus dipsaci* in phlox.

M.T.F.

518—Science. Lancaster, Pa.

- a. MAI, W. F. & PETERSON, L. C., 1952.—“Resistance of *Solanum ballsii* and *Solanum sucrense* to the golden nematode, *Heterodera rostochiensis*, Wollenweber.” 116 (3009), 224-225.

(518a) *Solanum sucrense* which has been shown to be resistant to infection with *Heterodera rostochiensis* under experimental conditions will cross easily with standard potato varieties. As inbred seedlings exhibited considerable variation in resistance, seven seedlings from plants with low infection were tested further. The results indicate that variation in susceptibility exists within the species.

R.T.L.

519—Scottish Naturalist.

- a. REYNOLDSON, T. B., 1952.—“A record of the leech *Hirudo medicinalis* from Islay, with brief mention of other species.” 64 (3), 164-166.

(519a) A single specimen of *Hirudo medicinalis* was found in Loch Nam Diol on Islay, Scotland. *Haemopsis sanguisuga* was common. Other species found in the lochs of Islay were *Helobdella stagnalis*, *Herpobdella* sp., *Glossiphonia complanata* and *Theromyzon* (= *Protoplepis*) *tessellatum*.

R.T.L.

520—Seminar International. Hoddesdon, Herts.

- a. ANON., 1952.—“Trichinosis.” 1 (3), 11-16.

(520a) This article on the clinical aspects of Trichinella infection, the life-cycle of the parasite, the geographical distribution of trichinellosis, its mode of transmission and the diagnosis of the condition is notable for the very fine coloured illustrations of the clinical appearances resulting from involvement of the ocular tissues, and for the photomicrographs of the larvae in the blood and tissues.

R.T.L.

521—South African Journal of Clinical Science.

- a. ELSDON-DEW, R. & FREEDMAN, L., 1952.—“Intestinal parasites in the Natal Bantu.” 3 (2), 59-65.

(521a) Single stool examinations of 1,013 Natal Bantu, registering for work in Durban, gave a helminth incidence of: *Trichuris* 46.1%, *Ascaris lumbricoides* 48.27%, hookworm 16.07%, *Enterobius* 0.1%, *Heterodera* sp. 0.89%, *Strongyloides stercoralis* 0.69%, *Schistosoma mansoni* 0.69%, *Taenia* spp. 11.06%, *Hymenolepis nana* 0.2%. Direct smear and zinc sulphate flotation as routine techniques were compared. The latter showed a marked gain in the number of helminth species detected except for *S. mansoni* and *Strongyloides* larvae. *Taenia* eggs were increased by 18%.

R.T.L.

522—South African Medical Journal.

- a. PITCHFORD, R. J., 1952.—“Intestinal bilharziasis in the Eastern Transvaal. A preliminary report.” **26** (26), 524–528.
- b. BATES, B. H. & ALBERTO, V. G., 1952.—“Routine stool examinations: confirmation of the value of the acid-sulphate ether concentration test.” **26** (31), 621–624.

(522a) In a small area of the low veld bush country of Eastern Transvaal, the incidence of *Schistosoma mansoni* in 819 native schoolchildren ranged from 2.3% at White River and Driehoek to 73.4% at Eureka. An enlarged liver rate was noticed. It depended on the intensity of schistosome infection and not on malaria or malnutrition. All the places (except Guernsey) where the intensity was 50% or over are situated in the Kraap Crocodile River Valley. All European farms except in those at Driehoek are highly canalized and have a dense total snail population. Their intensity rates range from 40% to 75%. In the native reserves, where there are no canals, the snail population is dense to moderate and the *S. mansoni* rate is moderate to low. R.T.L.

(522b) Cases of intestinal schistosomiasis were less liable to be overlooked, and many more cases of Ascaris, Trichuris and Taenia were revealed, by using the acid-sulphate-ether concentration technique than by the usual direct method. R.T.L.

523—Svensk Frötidning.

- a. GELIN, O., 1952.—“Nematodförekomsten i klöverfrö.” **21** (3), 38–39.

(523a) Gelin has found that there is a great reduction in the number of nematodes per gramme in samples of red clover seed after careful cleaning of the seed. S.B.

524—Systematic Zoology. Washington, D.C.

- a. VAN CLEAVE, H. J., 1952.—“Speciation and formation of genera in Acanthocephala.” **1** (2), 72–83.

(524a) Van Cleave considers how mutation, natural selection and isolation may operate in furnishing the bases for establishing new species and higher taxonomic groups in the Acanthocephala. He discusses their phylogeny and variability, and the difficulties of classification. R.T.L.

525—Texas Reports on Biology and Medicine.

- a. STRYZECKA-KSTUPSKA, A., 1952.—“A helminthologic survey of railway employees of the Warsaw railway circuit.” **10** (4), 928–929.

(525a) Of 819 faecal samples from railway employees at Warsaw, 13.78% were positive for helminth eggs. The incidence of individual species was *Trichuris trichiura* 11.25%, *Ascaris lumbricoides* 5.76%, *Enterobius vermicularis* 1.28%, *Diphyllobothrium latum* 0.2%, *Taenia solium* 4.41% and *T. saginata* 0.2%. After the age of 15 years, *T. solium* was more frequent in women than in men. The low incidence of *T. saginata* is attributed to the limited use of beef as compared with the extensive consumption of pork. R.T.L.

526—Thérapie. Paris.

- a. TURPIN, R., CAVIER, R. & SAVATON-PILLET, J., 1952.—“Traitement de l'oxyurose par le di(phénylacétate) de pipérazine (D.P.P.).” **7** (2), 108–113.

(526a) Diphenylacetate of piperazine (referred to in this article as D.P.P.) was used for 41 children, aged from 30 months to 16 years, for the treatment of Enterobius, Ascaris and, in one case, Trichuris infections. The dose of 0.075 gm. (or, in more obstinate cases, of 0.1 gm.) per kg. body-weight was given half in the morning and half in the evening and on each occasion was again divided, half being given by the mouth in glutinated granular form and half as a suppository. This was usually repeated on the following day and again after 20 days if necessary. In all except one case the drug was very well tolerated, even by very

young children, and resulted in a complete cure in 27 cases after one two-day treatment and in six cases after two treatments, in infections with *Enterobius* and/or *Ascaris* (mainly the former). In six cases treatment was not completed, in one it was effective against *Ascaris* but not against *Trichuris* and in one case a course of three treatments at 20-day intervals was ineffective against *Enterobius*.
P.M.B.

527—Tidsskrift for Planteavl.

- a. LINDHARDT, K., 1952.—“Undersøgelser over angreb af nematoder på jordbaer i Danmark.” 55 (4), 658–699. [English summary pp. 695–697.]

(527a) By means of detailed measurements of 50 males and 50 females from 12 populations Lindhardt shows that the two *Aphelenchoides* species found on strawberries in Denmark are *A. fragariae* and *A. ritze-bosi*. In inoculation experiments the following were found for the first time to be hosts: for *A. ritze-bosi*, *Begonia Gloire de Lorraine* and *Saintpaulia ionantha*; for *A. fragariae*, *Nicotiana virginiana* and *Dahlia variabilis*; for both species, *Saxifraga sarmentosa*, *Scindapsus aureus* and *Cyclamen persicum*. The symptoms of eelworm attack on strawberries, the biology of the eelworm, its distribution and economic importance in Denmark, sources of infestation, preventive measures and control are all dealt with. Finally a description is given of an attack of *Ditylenchus dipsaci* on strawberries, the first recorded in Denmark.
M.T.F.

528—Tierärztliche Umschau.

- a. BEHRENS, H., 1952.—“Ein Beitrag zur parasitären Gastroenteritis des Schafes.” 7 (15/16), 270–274.
b. ULLRICH, K., 1952.—“Zur Entwurmung beim Hunde. Kurze Stellungnahme zu den Ausführungen Erhardts über Ol. Chenopodii und Mandaverm.” 7 (15/16), 284–285.
c. HUPKA, E. & BEHRENS, H., 1952.—“Prüfung der Verträglichkeit des Wurmmittels Phenothiazin bei Ferkeln und Läuferschweinen.” 7 (17/18), 322–326.
d. NICKEL, E. A., 1952.—“Ein Beitrag zur Wirksamkeit und Verträglichkeit des Tetrachlor-kohlenstoffes bei Magenwurmbefall der Gänse.” 7 (19/20), 382–384.
e. DIETRICH, W., 1952.—“Erfahrungen mit dem Anthelminthicum Terit in der Kleintier-praxis.” 7 (19/20), 390–391.

(528a) The damp spring and summer and the lack of sunshine in 1951, which produced ideal conditions for the development of trichostrongyle larvae, led to severe outbreaks of parasitic gastro-enteritis in sheep in Western Germany. His experiences in dealing with these outbreaks lead Behrens to make the following recommendations. Treatment with phenothiazine suspension (20–30 gm. for adults and yearlings, 5–20 gm. for lambs according to age, repeated at the earliest after 3–4 weeks) should be supplemented by ample feeding and rotational grazing. Treatment should not be given to lambs under six weeks, to rams during the mating period, or to ewes one month before and after lambing. The importance of preventive treatment for the whole flock (except lambs under six weeks) is stressed.
A.E.F.

(528b) Ullrich challenges Erhardt's statement [see Helm. Abs., 21, No. 148d] that iso-amyl ester of mandelic acid is better tolerated than chenopodium oil and just as efficacious. He draws on his 22 years' experience with chenopodium oil, with which he has treated thousands of dogs for ascarid and hookworm infections, to prove that that substance is exceptionally well tolerated and that he has never seen any sign of intoxication. He maintains further that chenopodium oil acts much more quickly than the mandelic acid preparation.
A.E.F.

(528c) Hupka & Behrens' experiments on 48 pigs aged between six weeks and five months have demonstrated that the therapeutic dose of 0.5 gm. phenothiazine per kg. body-weight is well tolerated. Side effects noted were: reduction of erythrocyte count and haemoglobin content, fall in temperature, disturbances of locomotion, red pigmentation of urine, and (in direct sunlight) reddening of the skin and swelling of the ears. None was serious. A few animals were given doses of 0.75 gm., 1.0 gm., 1.5 gm. and 2.0 gm. per kg. body-weight and symptoms were correspondingly more serious, but in every case the animals appeared clinically normal

48 hours after administration. Three different phenothiazine preparations were tried (phenothiazine Höchst, phenothiazine 162/V Höchst and Benzopar-N) but were indistinguishable in action. A.E.F.

(528d) Nickel reports that eight of a flock of 28 young geese treated with carbon tetrachloride for *Amidostomum anseris* infection died within one to ten days of, it is assumed, carbon tetrachloride poisoning. He recommends tolerance tests on one or two unthrifty birds before a whole flock is treated. It is also reported that a flock of 36 young geese (weights between 1.3 kg. and 1.5 kg.) were treated for *A. anseris* with a single dose of 2-3 c.c. carbon tetrachloride in liquid paraffin: six geese were still positive up to 17 days after treatment. A.E.F.

(528e) Dietrich has found Terit Höchst [for description see Helm. Abs., 21, No. 148a] highly successful in the treatment of ascarid and hookworm infections in dogs. A dose of 0.4 c.c. per kg. body-weight was equally successful against both parasites (as also against coccidia) and was in all cases well tolerated. A.E.F.

529—Transactions of the American Microscopical Society.

- a. KNISKERN, V. B., 1952.—“Studies on the trematode family Bucephalidae Poche, 1907, Part II. The life history of *Rhipidocotyle septpapillata* Krull, 1934.” 71 (4), 317-340.
- b. EDGERLY, R. H., 1952.—“A new oxyurid nematode, *Alaeuris yumanae* n.sp., from the lizard, *Dipsosaurus dorsalis*.” 71 (4), 341-343.
- c. ODLAUG, T. O., 1952.—“*Brachylaima condylura* n.sp., from the star-nosed mole, *Condylura cristata*.” 71 (4), 344-346.
- d. PRIEBE, M. D., 1952.—“Acanthocephalan parasites of waterbirds in eastern Washington.” 71 (4), 347-349.
- e. VOGEL, M., 1952.—“*Mesogyna hepatica* n.g., n.sp., (Cestoda: Cyclophyllida) from the kitfox, *Vulpes macrotis*.” 71 (4), 350-354.

(529a) Kniskern has elucidated the life-history of *Cercaria basi* which infects the mussel, *Lampsilis siliquoidea*, (17%) in the marl bottom lakes of the Huron River system. The sporocysts are polymorphic branching structures and secondary germinal masses free within the sporocyst lumen represent an abbreviated second generation which gives rise to pharyngeate long-tailed furcocercous cercariae. Under experimental conditions, these penetrated and encysted in the muscles of the fishes *Lepomis gibbosus*, *Semotilus atromaculatus*, *Micropterus salmoides* and *Lebistes* sp. The metacercariae resembled adult *Rhipidocotyle septpapillata* except for size and immaturity. Kniskern remarks that massive doses of the cercariae cause the tail and fins of small fish to become bloodshot and death may result from haemorrhage or poisoning. The natural definitive host is *Micropterus dolomieu*, that of *R. papillosum* is *M. salmoides*. The absence of flame cells in the miracidium or sporocyst, and the branching sporocyst suggest a closer relationship of bucephalids to brachylaemids than to Clinostomatidae, Schistosomatidae or Strigeidae. R.T.L.

(529b) *Alaeuris yumanae* n.sp., obtained from the lizard (*Dipsosaurus dorsalis*) in Arizona and the first record of the occurrence of *Alaeuris* in North America, belongs to the group of species which have four genital papillae but lack lateral alae. It resembles *A. longispicula* and *A. galapagensis* but a second pair of preloacal papillae are absent. Instead, there is a pair of small pedunculated caudal papillae arising from the caudal stalk and projecting into the caudal ala. There are three text figures. R.T.L.

(529c) *Brachylaima condylura* [which had already been published as a new species in 1951 in the author's abstract which appeared in *J. Parasit.*, 1951, 37, Suppl. p. 24 (for abstract see Helm. Abs. 20, No. 451be)] is now figured and is provided with a more detailed specific diagnosis. R.T.L.

(529d) The Acanthocephala collected from 16 species of water birds as a result of an examination of 199 specimens belonging to 25 species are listed. *Colymbus grisegena holbollii*, *Nycticorax n. hoactli* and *Hydroprogne caspia* are new hosts for Acanthocephala. In one specimen of *Mergus merganser americanus* which harboured 204 mature *Polymorphus obtusus*

there were nodules on the external surface of the intestine which would undoubtedly interfere with peristalsis. The proboscis hooks penetrating the smooth muscles produced typical parasitic inflammatory effects and eventually fibrosis.

R.T.L.

(529e) *Mesogyna hepatica* n.g., n.sp. collected from the liver of *Vulpes macrotis* in California is provisionally assigned to Mesocestoididae as there are ventral and median genital pores and an unarmed scolex. It differs from *Mesocestoides* in that a uterine capsule is absent. There are four text figures.

R.T.L.

530—Transactions of the Royal Canadian Institute.

- a. ANDERSON, R. C., 1952.—“Description and relationships of *Dirofilaria ursi* Yamaguti, 1941, and a review of the genus *Dirofilaria* Railliet and Henry, 1911.” 29 (2), 35–65.

(530a) Nematodes collected from black bears (*Ursus a. americanus*) are referred to *Dirofilaria ursi* Yamaguti, 1941. The males and microfilariae are described for the first time and the females are redescribed more fully. *D. ursi* is placed in the subgenus *Nochtiella* Faust, 1937 and compared in detail with *D. subdermata* (syn. *D. spinosa*), *D. acutiuscula*, *D. repens* and *D. genettae*. The genus *Dirofilaria* Railliet & Henry, 1911 is reviewed and found to consist of 23 apparently valid species and one sp.inq. *D. spirocauda* (Leidy, 1858) is placed as a synonym of *D. immitis* (Leidy, 1856) and *D. conjunctivae* (Addario, 1885) as a synonym of *D. repens* Railliet & Henry, 1911. The citation *D. spinosa* Canavan, 1929 is dropped in favour of *D. subdermata* (Mönnig, 1924). *D. striata* (Molin, 1858) is considered as a sp.inq. *D. ochmanni* (Fülleborn, 1908) is reallocated to *Microfilaria*. Cuticular ridges are reported in *D. ursi*, *D. repens*, *D. acutiuscula* and *D. subdermata* and it is noted that *D. immitis* lacks these structures.

R.C.A.

531—Transactions of the Royal Society of Tropical Medicine and Hygiene.

- a. COLBOURNE, M. J., 1952.—“Treatment of ascariasis with hetrazan in the Gold Coast.” 46 (6), 662–665.
 b. McFADZEAN, A. J. S. & WONG, C. C., 1952.—“Intravenous iron in the management of the anaemia of ancylostomiasis.” 46 (6), 674–677.
 c. THOMSON, F. A., 1952.—“Treatment of ascariasis with diethylcarbamazine.” [Correspondence.] 46 (6), 679.
 d. MANSON-BAHR, P., 1952.—“Further research on filariasis in Fiji”. Corrigenda.” [Correspondence.] 46 (6), 680.

(531a) Hetrazan given as a syrup containing 30 mg. in 1 ml., in doses of 14 mg. per kg. body-weight once daily for four days proved as effective against ascaris infection as 30 minims of oil of chenopodium (of which 15 minims were followed by 15 minims one hour later, and by a purge two hours after). Skin irritation occurred in 25% of the cases receiving hetrazan. This irritation may have been due to the presence of *Dipetalonema streptocerca* embryos but it did not appear in two patients with streptocerciasis. In three patients, living *Dipetalonema streptocerca* were observed in the skin for two months after treatment.

R.T.L.

(531b) Twenty-five Chinese cases of uncomplicated ancylostomiasis anaemia showed rapid response to intravenous treatment with Ferrivenin which contains saccharated oxide of iron. The haemoglobin rose from 4.5 to 13.6 gm. per 100 c.c. on the average in 43 days. One case refractory to iron by the mouth reacted similarly. A graph demonstrates the more rapid recovery in these 25 cases after the intravenous injections than after the oral administration of ferrous sulphate and ascorbic acid to 14 other cases.

R.T.L.

(531c) Fifty children with ascariasis were satisfactorily treated with hetrazan tablets. The dosage given was 20 mg. per kg. body-weight in 24 hours for not less than four days. There were no toxic symptoms. A seven-day course is considered adequate. Hetrazan is especially suitable for debilitated and malnourished children.

R.T.L.

(531d) On p. 320 of Manson-Bahr's article, "Further research on filariasis in Fiji", "Western Pacific" should read "Eastern Pacific" and vice versa and "E. of 170°" should read "W. of 170°E.". The area shown on the accompanying map as "E. of Greenwich" is officially known as the Western Pacific and that designated "W. of Greenwich" as the Eastern Pacific.

R.T.L.

532—Universitetet i Bergen. Årbok.

- a. BRINKMANN, Jr., A., 1952.—"Fish trematodes from Norwegian waters. I. The history of fish trematode investigations in Norway and the Norwegian species of the order Monogenea." Year 1952, No. 1, 134 pp.

(532a) Brinkmann's monograph opens with a review of the work of earlier investigators. The 37 species of Monogenea previously reported from fish in Norwegian waters are listed. Old collections in Norwegian museums, many of which have never been described, are located and annotated. Thirty-three species are then critically considered under their respective families. The validity of *Leptocotyle minor* and *Paracotyle caniculae*, of some *Calicotyle* and *Acanthocotyle* species and of *Diclidophora* and *Dactylocotyle* are discussed. The systematic position of the family Chimaericolidae has required the erection of a new superfamily named Chimaericoloidea. Hexabothriinae of Price, 1942 is broadened to include *Rajonchocotyle*, *Rajonchocotylodes* and *Pseudohexabothrium rajae* n.g., n.sp. (from the gills of *Raja fyllae*) which is distinguished from other Hexabothriinae by its unarmed cirrus and the long filament arising from the posterior pole of the egg. A section is devoted to the anatomy of the female reproductive organs in the order Monogenea. There are 25 text figures and an extensive list of references.

R.T.L.

533—Växtskyddsnotiser.

- a. WAHLIN, B., 1952.—"Nematodangreppen ökar." Year 1952, No. 4, pp. 63-64.
b. BORG, Å., 1952.—"Angrepp av nematoder på havre." Year 1952, No. 5/6, pp. 69-74.

(533a) Wahlin has found that attacks by nematodes in different crops are more frequent now than they have been in the Swedish province, Östergötland. Stem nematode in clover is common and on one farm stem nematode has also been found in lucerne. Sugar-beet nematode is known from three different places in the province. Oat nematode (*Heterodera major*) has been known for many years but it was found to be much more widespread than was expected in a survey in 1952.

S.B.

(533b) Borg describes attacks by oat nematode (*Heterodera major*) in the Swedish province, Västergötland, where only a few farms with damage caused by this parasite were known. During 1952 the parasite was found in several more places. Borg also found stem nematode (*Ditylenchus dipsaci*) attacking oats and causing severe damage in this crop on two farms in 1952. He gives a description of the crop rotation on both farms where oats of the variety Victory have been grown.

S.B.

534—Veterinaria. Madrid.

- a. MARTÍN VAQUERO, B., 1952.—"Ascariidiosis de las gallinas. *Ascaridia galli*, fenotiazina y tetracoloruro de carbono." 16 (9), 807-814.

(534a) After a course of phenothiazine given with the feed for the treatment of *Ascaridia galli* infection in hens, autopsy showed that 80% were still infected; when administered individually at the rate of 1 gm. per adult bird 40% remained infected. A single dose of 3 gm. of carbon tetrachloride per adult bird (equivalent to 1.5 gm. per kg. body-weight) was 100% effective; mortality after this dosage was 0.3% and after 4 gm. per bird it was 1.7%. Neither starvation nor purging was necessary. The drug should be given in the evening.

P.M.B.

535—Veterinaria. Sarajevo.

- a. ŠENK, O., 1952.—“*Cyathocephalus truncatus*-Pallas, raširenost u izvorskom dijelu rijeke Bosne.” 1 (8/10), 740–751. [English summary p. 740.]
- b. VELIMIROVIĆ, S., 1952.—“Prilog poznavanju parazitarne faune goveda sa teritorija Srbije.” 1 (8/10), 810–813. [English summary p. 810.]

(535a) Senk has plotted the incidence of *Gammarus* infected with *Cyathocephalus truncatus* larvae in the river Bosnia from its source to the mouth of its tributary the Ljubina. The highest incidence of infection occurred from the confluence of the headwaters to the mouth of the VečERICA tributary and decreased towards the sources and downstream. Infected *Gammarus* were also found in the tributaries VečERICA, Bukulaš and Zujevina. The area conforms in extent with that in which the submerged plants *Myriophyllum verticillatum*, *Fontinalis* sp. and *Nasturtium officinalis* are dominant. In those sections where *Ranunculus paucista mineus* is the dominant species *Gammarus* is absent.

R.T.L.

(535b) The helminths collected at post-mortem examination of 200 head of Serbian cattle, ranging in age from one to eight years, are listed. The percentages of infection were: *Paramphistomum cervi* 4%, *Dicrocoelium dendriticum* 11.5%, *Fasciola hepatica* 68%, *Moniezia expansa* 8%, *M. denticulata* 3.5%, *M. benedeni* 4.5%, *Helicometra giardi* 2.5%, *Cysticercus inermis* [*C. bovis*] 10.5%, *C. tenuicollis* 13.5%, hydatid cysts 54.5%, *Gongylonema pulchrum* 10.5%, *Trichostrongylus extenuatus* 13.5%, *Ostertagia ostertagi* 19.5%, *Haemonchus contortus* 11.5%, *Neoascaris vitulorum* 1.5%, *Bunostomum phlebotomum* 1.5%, *Oesophagostomum radiatum* 10.5%, *Dictyocaulus viviparus* 18.5%, *Setaria labiato-papillosa* 33.5% and *Thelazia rhodesii* 21.5%.

R.T.L.

536—Veterinariya.

- a. SHCHERBOVICH, I. A., 1952.—[Experiments on the control of dictyocauliasis in cattle.] 29 (4), 24–28. [In Russian.]
- b. OREKHOV, M. D., 1952.—[*Dipetalonema* infection of camels in the Turkmen S.S.R. and methods of controlling it.] 29 (4), 28–30. [In Russian.]
- c. KRASTIN, N. I., 1952.—[The life-cycle of *Thelazia skrjabini*.] [Abstract.] 29 (5), 42–43. [In Russian.]
- d. EFREMOVA, N. I., 1952.—[Preventive measures against thelaziasis in cattle.] [Abstract.] 29 (5), 43. [In Russian.]
- e. SEMIKIN, V. I., 1952.—[Treatment of ascaridiasis in chickens.] [Abstract.] 29 (5), 43. [In Russian.]
- f. KALININ, I. V., 1952.—[Treatment of calves against dictyocauliasis.] [Abstract.] 29 (5), 43. [In Russian.]
- g. MALIGIN, S. A., 1952.—[Strongyloidiasis in pigs.] [Abstract.] 29 (5), 43–44. [In Russian.]
- h. AKRAMOVSKI, M. N., 1952.—[Dictyocaulus in horses.] [Abstract.] 29 (5), 44. [In Russian.]
- i. VASILEV, A. A., 1952.—[Coenurus—calamity of sheep raising.] [Abstract.] 29 (5), 44. [In Russian.]
- j. RYAZANTSEV, V. F., 1952.—[Duration of viability of parasitic larvae of Strongylidae in the soil.] 29 (5), 45. [In Russian.]
- k. FEDYUSHIN, V. P. & UTESHEV, A. I., 1952.—[Non-specific tuberculin reactions in cattle with fascioliasis.] 29 (6), 32–35. [In Russian.]

(536a) Shcherbovich conducted four experiments to ascertain the effects of various factors on the control of *Dictyocaulus* infection. In the first experiment, calves were pail fed and isolated from the adults in stalls and pasture. Only two (9%) contracted *Dictyocaulus* in the first year and all of them were free from infection by the third year. In the second experiment, the calves were stall fed and had calf runs for exercise; they did not graze in the first year of life. In the second and third years, they grazed on new grass from which other animals were banned. All of the calves remained free from infection. In the third experiment, the animals were treated every 26th–28th day, from 15th–20th June to 10th–15th October each year (pre-imaginal treatment). The prevalence and the intensity of infection were reduced every year and on one farm the animals did not show larvae of *Dictyocaulus* by the end of the third year. In the fourth experiment the author studied the influence of feeding and management on spontaneous cure. Animals which were well fed and cared for were all

free from infection by the end of the experiment. In Shcherbovich's opinion good feeding and care of the animals increases their resistance while the separation of young animals from adults on pastures and in stalls and pre-imaginal treatment all greatly contribute to good results in the control of dictyocauliasis. C.R.

(536b) The microfilariae of *Dipetalonema evansi* are found during the warm months in the blood vessels of the skin of infected camels. In the cold months they disappear into the capillaries of the liver, the lungs and the heart. From November to March, larvae of *D. evansi* are absent from the peripheral blood. Orekhov examined 4,607 camels and found that of those which grazed in the river districts, 46.8% were infected, while those which grazed in the desert area were not infected. *Camelus dromedarius* was more susceptible to *Dipetalonema* than was *C. bactrianus*. Orekhov suspects *Aedes detritus* of being the vector. Fouadin, given intravenously in three doses of 0.5 c.c. to 0.8 c.c. per kg. body-weight, killed adult worms and microfilariae. C.R.

(536c) Krastin has found that the intermediate host of *Thelazia skrjabini* is *Musca amica*. C.R.

(536d) Efremova sprayed the heads of 15 calves with an 0.25% emulsion of hexachlorane every seven days from 2nd June to 1st August and not one of them became infected with *Thelazia*. All animals in the control group consisting of 23 calves became infected by the beginning of July. C.R.

(536e) Semikin obtained good results against *Ascaridia* by dosing hens with 2 c.c. to 3 c.c. of carbon tetrachloride through a tube, followed by 5 c.c. to 10 c.c. of water to wash the drug from the tube. C.R.

(536f) Kalinin is of the opinion that the death of calves infected with *Dictyocaulus* is mainly due to bronchopneumonia and pneumonia. He used a 2%-3% solution of sodium norsulphasone, in the doses recommended for the administration of an aqueous solution of iodine, in 55 calves infected with *Dictyocaulus* [dosage is not mentioned]. Calves infected with *Dictyocaulus* but without pneumonia or bronchopneumonia were cured on the 4th or 5th day after treatment; those with pneumonia or bronchopneumonia received a further dose seven days later and were cured 10 to 15 days after the second injection. C.R.

(536g) Maligin reports that larvae, males and females of the free-living generations of *Strongyloides* die within 30 minutes during desiccation. At 43°C. to 50°C., eggs, males and females die in 4 hours, rhabditiform larvae in 3 hours and infective larvae in 6 hours. At -5°C. to -25°C. they die in 5 to 36 hours. Solutions of 3% phenol, 3% lysol, 5% potassium iodide, 5% creolin and 5% carbolin all killed these eggs, larvae, males and females, not only in pure culture but also in a thin layer of dung. The highest percentage of infection among young pigs is found in spring and autumn. Intensity of infection depends on conditions of husbandry, feeding and management. C.R.

(536h) In his study of the bionomics of *Dictyocaulus*, Akramovski found that the larvae can climb 2 cm. to 8 cm. vertically and migrate up to 30 cm. horizontally. First and second-stage larvae die within 5 to 40 minutes during desiccation; infective larvae die in 72 hours. If they are in faeces exposed to the sun they die in 2 to 4 days. Low temperatures, from -3°C. to -17°C., kill the larvae in 5 days. He found that larvae are unable to survive the winter on the pasture. They develop in water up to a depth of 2 cm. Under natural conditions, at 5°C. to 30.6°C., the larvae develop in 3 to 13 days (from May to September) and their average longevity in the faeces on the pasture is 25 days. Seasonal observations showed that horses were infected as follows: in January 14.3%, February 16.9%, March 14.9%, April 17.9%, May 14.1%, June 8.6%, July 9.9%, August 10.5%, September 11.8%, October 25%, and November 17.2%. Among 80 foals of the same year, the number of infected animals was 2 in July, 18 in August, 26 in September, 58 in October, 45 in November, 64 in December,

69 in January, 66 in February, 41 in March, 21 in April and 16 in May. By the following September, all foals were free from the parasite. In old horses which did not frequent the pasture and in well fed horses *Dictyocaulus* was found rarely. Development to maturity took 39 to 40 days in experimentally infected foals. In well fed animals the infection persists for 6 to 7 months, in poorly fed and hard working horses for 11 to 12 months or even up to 21 months. Akramovski also mentions that good results were obtained by treating foals up to one year of age with an aqueous solution of iodine (1:1,500) in doses of 40 c.c. to 70 c.c. Non-infected foals should not graze with infected animals. C.R.

(536i) Vasilev recommends quarterly dosing of all dogs against *Multiceps multiceps* and the surgical removal of the cyst from the brain of sheep. He gives details of the operation. C.R.

(536j) Strongylid larvae, at an average temperature of 13.6°C., develop from the egg to the infective stage in 16 days in black soil and in 18 days in clay soil. The longevity of infective larvae (in the Kuibishev district) in clay soil is two years and eight months and in stables, two years and two months. At high (summer) and low (winter) temperatures, the larvae of strongylids die off gradually and only after two years is the maximum death rate found. C.R.

537—Veterinarski Arhiv.

- a. ROMIĆ, S., 1952.—“Utjecaj želučane i crijevne parasitarne invazije na razvoj i oblikovanje tijela lipicanca.” 22 (9/10), 309–321. [English & Russian summaries pp. 319–321.]

(537a) Romić has studied the effect of gastric and intestinal helminths on the development and conformation of the body of 32 Lipitsanian horses in the stud at Djakovo. One half received carbon tetrachloride regularly every three months, with a second dose three weeks later. The untreated animals were constantly parasitized by ascarids, strongylids and *Gastrophilus* and were in a bad condition throughout the three years of the experiment. In summer and winter, each of them consistently ate 1 kg. of oats and about 30% of bulky food more than the treated animals, yet the body was smaller in absolute and relative depth and breadth, the loins were proportionally longer and the hunger pits more strongly marked. The head was correspondingly larger and the skeleton weaker. The body was 72.31 kg. or 17.31% less in weight. In the treated animals the parasites were only partly eliminated. Had they been eradicated, the differences between the treated and untreated horses would have been still greater. R.T.L.

538—Veterinary Medicine.

- a. DAVIS, L. R., BOWMAN, G. W. & PORTER, D. A., 1952.—“Portable pens compared with other enclosures for control of diseases of dairy calves.” 47 (12), 485–490, 512.

(538a) Results are given of observations over a period of 10 years on the mortality rates from disease among 340 calves reared in five different types of calf enclosures. In portable pens which were placed on a hillside and moved up the slope every week the calves remained free from helminths for five and a half years except for *Strongyloides papillosus* and in one case *Cooperia* sp.; infection with various species from outside sources then occurred in 27 out of 72 calves but remained light. More species and more ova were found in 13 calves bought when at least two days old than in 14 placed in pens when only one day old. The absence of *Dictyocaulus viviparus* is noted. P.M.B.

539—Veterinary Record.

- a. SPEDDING, C. R. W., 1952.—“The value of the faecal egg count in sheep.” 64 (50), 813–815.

(539a) From a series of studies on the trichostrongylid egg-per-gramme counts in sheep, Spedding concludes that the variations in individual sheep during a 24-hour period cannot

be explained by the quantitative output of faeces, nor by inaccuracies in the counts. He is of the opinion that they are due to actual variations in the rate of egg production by the worms. The apparent rhythm observed in individual sheep varied too much from sheep to sheep to be predictable. A method of using a mechanical mixer to ensure even mixing of all faeces passed in 24 hours before sampling, which eliminates these errors, is described. S.W.

540—Vie et Milieu. Paris.

- a. DEBOUTTEVILLE, C. D. & EUZET, L., 1952.—“Caractéristiques d'un squalé pèlerin *Cetorhinus maximus* (Gunner).” 3 (2), 216–217.

(540a) In a fish (*Cetorhinus maximus*) captured near Narbonne two tapeworms were found, viz., *Dinobothrium planum* and *D. spinosum*. This is the second report of *D. spinosum* from the Mediterranean. The first record was named by Euzet, *D. humile*, but this is a synonym of *D. spinosum*. R.T.L.

541—Virginia Journal of Science.

- a. HARGIS, Jr., W. J., 1952.—“Monogenic trematodes of Westhampton Lake fishes. II. A list of species and key to the genera encountered.” New series, 3 (2), 112–115.

(541a) Twenty-four identified species and two unplaced species of Monogenea found on the gills of 110 fishes from Westhampton Lake, University of Richmond, Virginia, are listed under their hosts. All the parasites are new records for the locality while *Cleidodiscus stentor* on *Pomoxis nigro-maculatus* and *Haplocleidus dispar* on *Chaenobryttus coronarius* are new host records. There is a key to the seven known genera of the Westhampton Lake Monogenea. R.T.L.

542—Vlaams Diergeneeskundig Tijdschrift.

- a. VERCRUYSSSE, R., 1952.—“Het leverbotprobleem en zijn bestrijding.” 21 (6), 117–123. [English, French & German summaries p. 123.]

(542a) The livers of about 10% of the 12,382 animals slaughtered between October 1946 and June 1947 at the abattoir in Ghent were condemned on account of fascioliasis hepatica. R.T.L.

543—Vlugschrift. Plantenziektenkundige Dienst, Wageningen.

- a. ANON., 1952.—“Bladaaltjes in siergewassen.” No. 3, 4 pp.

(543a) The ornamental host plants of *Aphelenchoides ritzema-bosi* and *A. fragariae* are listed and the life-histories and symptoms caused by these two species of nematodes are described. A section on prevention and control gives the usual precautions used to prevent spread of the nematodes and mentions warm-water treatment and parathion spraying as control measures. M.T.F.

544—West African Medical Journal.

- a. ANON., 1952.—“Visceral larva migrans.” [Editorial.] 1 (4), 139–140.
- b. ONABAMIRO, S. D., 1952.—“The geographical distribution and clinical features of *Dracunculus medinensis* in south-west Nigeria.” 1 (4), 159–165.
- c. STONES, P. B., 1952.—“Successful treatment of loiasis with diethylcarbamazine in low dosage.” 1 (4), 174–180.
- d. JELLIFFE, D. B., 1952.—“*Ascaris lumbricoides* presenting through the umbilicus.” 1 (4), 183–184.

(544a) Attention is drawn to a condition which must be of frequent occurrence in West Africa, although not easy to diagnose, viz., ill-health due to migrating ascarid larvae, not

only of *Ascaris lumbricoides* but also of *Toxocara* spp. of cats and dogs which, in the wrong host, are usually unable to pass further than the liver. R.M.G.

(544b) The incidence of dracontiasis in south-west Nigeria is mostly confined to areas without rivers, where the inhabitants depend on stagnant ponds for their drinking water. In a survey of over 5,000 children from schools picked at random in these areas, 10% were found infected. Thirty species of *Cyclops* were observed in the region and these are classified according to habitat. Only five were found capable of harbouring *Dracunculus* larvae up to the infective stage, and these formed the dominant *Cyclops* fauna of most village ponds. Species inhabiting running or brackish water do not play any significant part in the transmission of the parasite. R.M.G.

(544c) Stones records 21 cases of loaiasis in Europeans treated with hetrazan in doses between 1 mg. and 2 mg. per kg. body-weight, three times daily for seven days, except two who received 4 mg. In one patient there was a recrudescence of symptoms a month after treatment. The remainder appeared completely cured, the follow-up period varying from six months to two years. Admission to hospital was only necessary in one case. Six others showed mild reactions. These subsided within 48 hours, so were probably due to the effect of the drug on the parasite rather than to its not being tolerated by the patient. In six cases symptoms appeared within six months of taking up residence in an endemic area, a shorter period than that generally recognized. In addition to the usual symptoms associated with the disease, several cases showed a low-grade evening pyrexia for six months or more, and another had developed asthma. These promptly disappeared on treatment. R.M.G.

(544d) A five-year-old child, after being treated for *Ascaris* with oil of chenopodium, developed an abscess which pointed and ruptured through the umbilicus. A dead adult worm was extracted from the abscess cavity. R.M.G.

545—Wiener Tierärztliche Monatsschrift.

- a. PRÜGELHOF, F., 1952.—“Natriumfluorid als Wurmmittel beim Schwein.” 39 (8), 490–495. [English, French & Italian summaries pp. 494–495.]

(545a) The growth of young pigs is retarded by heavy infection with *Oesophagostomum*. The skin has an unthrifty appearance and the legs may be eczematous. Sodium fluoride is very effective against *Ascaris*, *Strongyloides* and *Oesophagostomum*. The dose recommended is 0.3 gm. per kg. body-weight three times in one day mixed with the food at the rate of 0.5%. The maximum dose per meal is 10 gm. The pigs should not be starved before treatment. R.T.L.

546—Year Book. Institute of Inspectors of Stock of New South Wales.

- a. JONES, T. R., 1952.—“The lesser liver-fluke (*Dicrocoelium dendriticum*).” A case report. Year 1952, p. 45.
b. MADDEN, F. J., 1952.—“Acute fluke infestation. Carbon tetrachloride in large doses.” Year 1952, pp. 47–48.
c. GORDON, H. McL., 1952.—“How helminths harm their hosts.” Year 1952, pp. 61, 63–67, 69.
d. JONES, N. L. C. & JONES, N. S., 1952.—“*Gongylonema* spp. in the rumen of a cow.” Year 1952, p. 83.

(546a) Deaths at the rate of one or two sheep per day occurred during February 1952 in a flock of about 400 one-year-old sheep in the Leeton Irrigation Area of New South Wales. Post-mortem on one wether showed typical “black disease” with the liver heavily scarred. Detailed dissection revealed numerous *Dicrocoelium dendriticum* in the peripheral or small bile ducts. This fluke has not been recorded hitherto in New South Wales. R.T.L.

(546b) 1950 was the wettest year recorded in New South Wales. Acute fluke outbreaks started in the following May. As many as 1,000 adult and over 6,000 immature flukes were counted from one liver. A dose rate of 4 ml. of carbon tetrachloride in 16 ml. of paraffin gave amazing results. At Moss Vale the death rate of approximately 200 sheep per week was stopped in three days and there were no toxic effects. As acute fluke infection was causing the loss of at least one animal daily in another flock of 350 first quality Merino ewes in about mid-pregnancy, the dose of carbon tetrachloride was increased to 5 ml. There was only one death subsequently. The area was known to be calcium deficient and the sheep had had access to a calcium-rich lick consisting of ground limestone and coarse salt for at least three weeks prior to treatment. R.T.L.

(546c) There are many ways in which helminths harm their hosts and some of them are not yet understood. Helminthiasis may be a complex disease and is often associated with, and aggravated by, nutritional deficiencies. Probably much greater economic loss accrues from subclinical than from heavy infections. Control is not synonymous with eradication. Helminth infection must not be allowed to develop into helminthiasis. Examples are given which show that the feeding habits and habitats of different helminth species affect their hosts in different ways. Wandering immature worms may cause serious damage. This form of attack is not easily controlled by commonly applied measures. The additive effects of parasites with similar ill-effects and dietary deficiencies are stressed. Recovery from severe helminthiasis may be very slow. R.T.L.

(546d) A large number of *Gongylonema pulchrum* ranging from 5 cm. to 8 cm. in length were found in the contents and on the mucous membrane of the rumen during a post-mortem on a cow at Teven, New South Wales. R.T.L.

547—Zeitschrift für Ärztliche Fortbildung.

- a. SCHOLTEN, C., 1952.—“Die Behandlung der Oxyureninfektion mit Triphenylmethanfarbstoffen auf Grund neuer pharmakologischer Erkenntnisse.” 46 (19), 582–584.

(547a) Scholten summarizes recent work on the treatment of *Enterobius vermicularis* infection with gentian violet, methyl violet, crystal violet and malachite green. He considers these triphenylmethane dyes to be the remedies of choice against this infection. An effective preparation is Atrimon which, having a carbinol base, is relatively insoluble and is less toxic. The course of treatment should extend over at least seven days; the patient should be warned against the dangers of autoinfection and strict personal hygiene should be combined with the treatment. A.E.F.

548—Zeitschrift für Hygiene und Infektionskrankheiten.

- a. JETTMAR, H. M., 1952.—“Über die bacteriostatische und bactericide Wirkung der Cöloflüssigkeit der Ascariden.” 134 (1), 24–46.

(548a) Jettmar's *in vitro* experiments, which are described in detail, have demonstrated that ascaris body fluid (obtained principally from *Parascaris equorum*) has a strongly bactericidal action on gram-positive bacteria and their spores while gram-negative species are almost completely resistant. Diphtheria strains, Sarcina, gram-positive cocci (even penicillin-resistant strains) and Clostridium were especially sensitive. Experiments on guinea-pigs showed that ascaris body fluid had a definite prophylactic action against many times the lethal dose of diphtheria and anthrax bacilli. A.E.F.

549—Zeitschrift für Immunitätsforschung und Experimentelle Therapie.

- a. GAASE, A., 1952.—“Die serologische Trichinose-Diagnose bei der Mescheder Epidemie im Herbst 1950.” 109 (6), 433–461.

(549a) Gaase reports on the results of diagnosis of trichinelliasis by means of the complement fixation test which was used in the Meschede epidemic of 1950 [for an account of

the outbreak see Helm. Abs., 21, No. 170a]. Of the 436 cases 417 were tested: 361 (86.5%) were positive, 11 (2.6%) were doubtful, and 44 (10.5%) negative. There was very little difference in the percentage of positive results as between children, adolescents and adults. An increase of negatives was recorded at age 40 though this was probably accidental. Of the positive cases 314 (86.98%) showed clinical symptoms, the remaining 47 being symptom-free. In 21 cases infection was diagnosed from one to four days before symptoms appeared. The epidemic was a mild one and there were no deaths.

A.E.F.

550—Zeitschrift für Morphologie und Ökologie der Tiere.

- a. OSCHKE, G., 1952.—“Die Bedeutung der Osmoregulation und des Winkverhaltens für freilebende Nematoden.” 41 (1), 54–77.

(550a) Osche states that the osmotic value of the medium (rotting meat, dung etc.) is a most important ecological factor for saprophagous nematodes. He shows that these nematodes are largely able to adapt themselves to the changes in osmotic values which take place as decomposition proceeds. The relationship between osmotic adaptation and parasitism is discussed. Experiments with *Turbatrix aceti* have demonstrated that the adaptation of this nematode is related to the acidity of the vinegar rather than its relatively low osmotic value: specimens of *Rhabditis plicata* did not survive even in vinegar diluted 1:10 with distilled water. Osche describes the “waving” procedure said to be adopted by many species of saprophagous nematode larvae when they find themselves in unsuitable media. The worm raises itself almost vertically and waves its body about, a procedure which favours its transport by insects. The phylogenetic significance of this action is discussed. *Rhabditis strongyloides* larvae form spherical clumps of large numbers of individually rolled up larvae and are thus able to survive for weeks in unsuitable media.

A.E.F.

551—Zeitschrift für Parasitenkunde.

- a. ENIGK, K. & GRITTNER, I., 1952.—“Zur Morphologie von *Strongylus vulgaris* (Nematodes).” 15 (4), 267–282.
b. SCHUURMANS-STEKHOFEN, Jr., J. H., 1952.—“Über die Anatomie des *Hedruris mucronifer* n.sp. und dessen parasitäre Anpassungen an den Wirt.” 15 (4), 316–320.

(551a) Enigk & Grittner have studied the morphology of fourth-stage larvae and adults of *Strongylus vulgaris*. The fourth-stage larvae do not differ significantly from those of other horse strongyles. The digestive and excretory organs of the adult closely resemble those of the fourth-stage larvae. The metabolism of the adult varies considerably according to whether the worm is living in the arteries or in the intestinal lumen. The lateral fields of both larvae and adults are described in detail and illustrated. They each contain two excretory canals, one straight and the other winding, plus a further canal which surfaces at the anterior end of the worm at the lateral papilla. These canals are probably homologous with the amphidial glands of other nematodes.

A.E.F.

(551b) Schuurmans-Stekhoven describes *Hedruris mucronifer* n.sp. from *Telmatobius schreiteri*: it is the 14th member of the genus and the second to be reported from Argentina. *Hedruris* is the only nematode genus in which the female attaches itself to the host—in this case to the intestinal villi—by its posterior end which has developed into a sucker. A photomicrograph of the tail end of the female is included and the significance of this as an adaptation of a parasite to its host is discussed. The male attaches itself to the female by its tail end. A.E.F.

552—Zeitschrift für Tropenmedizin und Parasitologie.

- a. GOETERS, W., 1952.—“Untersuchungen an Enterobien (Oxyuren). 2. Mitteilung. Das Infektionsgeschehen bei der menschlichen Enterobiasis unter besonderer Berücksichtigung biologischer Gesichtspunkte.” 3 (4), 508–537. [English summary p. 536.]

- b. HUECK, O., 1952.—"Hakenwurmerkrankung in der Krankenhauspraxis in Tungkun, Südchina." 3 (4), 537-545.
- c. KOENIGSTEIN, R. P., 1952.—"Über das Vorkommen von *Schistosoma japonicum*-Eiern in chirurgischen Biopsien." 3 (4), 546-549. [English summary p. 549.]

(552a) The cellophane tape technique proved superior to Schüffner's stamp method and the NIH swab in detecting *Enterobius* infections. The Lancaster formula for calculating endemic infection index by serial and unrepeat examination was found to be valid for enterobiasis. R.T.L.

(552c) *Schistosoma japonicum* eggs were found in sections of biopsy tissue of excised appendix, rectal carcinoma, mesentery, mesenteric glands, sigmoid polyps, rectal fistula from 23 cases in the majority of which no eggs were found in the faeces. Eggs were also found by macerating the tissues in 10% sodium hydroxide. R.T.L.

553—Zoologicheskii Zhurnal.

- a. DOBROVOLSKI, A. V., 1952.—[Parasitic diseases in *Ondatra*.] 31 (4), 640-642. [In Russian.]
- b. CHUBRIK, G. K., 1952.—[The larval stage of the trematode *Fellodistomum fellis* Nicoll 1909 from the invertebrates of the Barentz Sea.] 31 (5), 653-658. [In Russian.]
- c. PAVLOVSKI, E. N., 1952.—[Main results of the VIIth meeting on parasitological problems, held at the Zoological Institute of the Academy of Sciences of the U.S.S.R., 26 February—3rd March, 1952.] 31 (5), 769-777. [In Russian.]
- d. KOSHEVA, A. F., 1952.—[Infection of some species of fish of the Middle Volga with larvae of *Diphyllbothrium latum* L. and *Opisthorchis felinus* Riv.] 31 (5), 779-780. [In Russian.]

(553a) Dobrovolski records the following helminths in *Ondatra* from eastern Siberia: *Notocotylus quinqueserialis* (originated from America), *Plagiorchis eutamias zibethica*, *Macracanthorhynchus hirudinaceus*, *Trichuris ovis* and *T. trichiura* (acquired locally). C.R.

(553b) Chubrik found 22% of *Ophiura sarsi* infected with metacercariae of *Fellodistomum fellis*, a parasite of the gall-bladder of fish. The identification was made by comparing the metacercariae found in *O. sarsi* with the young forms of *F. fellis* found in the gall-bladder of "zoubatka", all of which are infected with this fluke. Chubrik is of the opinion that the first intermediate host of *F. fellis* is *Nucula tenuis*. She describes and illustrates the developmental stages in the mollusc. C.R.

(553c) At this parasitological conference, 102 papers were delivered. In the section concerned with helminthology, papers dealing with the study of life-cycles, the conditions determining the characters and dynamics of helminth fauna, the control of helminths and their systematics were presented. The conference decided that the following problems had to be undertaken: (i) the study of helminth parasites in domestic animals in various parts of the U.S.S.R., (ii) the study of the role of wild animals as reservoirs of helminths for domestic animals, (iii) an extension of experimental investigations on the problems of specificity and immunology of various helminths, and of the symptomatology and therapy of helminth diseases. C.R.

(553d) During the examination of various species of fish from the Middle Volga, Kosheva found metacercariae believed to be those of *Opisthorchis felinus* in 33.3% of *Idus idus*, in 20% of *Leuciscus rutilus* and in 9% of *Alburnus alburnus*, but some of these metacercariae belonged to *Pseudamphistomum truncatum*, as when she fed metacercariae to two kittens she obtained both *O. felinus* and *P. truncatum*. Plerocercoids of *Diphyllbothrium latum* were found in 46.6% of *Perca fluviatilis*, in 20% of *Esox lucius* and in 75% of *Lota lota*. Kosheva also examined 38 cats in the town of Kuibyshev and found 23 of them to be infected with *O. felinus* and three with *P. truncatum*. C.R.

554—Zoologische Garten (Der). Leipzig.

- a. MÜLLER, G., 1952.—“Die Bismarratte in Sachsen-Anhalt als Zwischenwirt von Cestoden.” 19 (1), 42–44.

(554a) Müller briefly reviews earlier records of helminth parasites in *Fiber zibethicus* and adds to the list *Cysticercus fasciolaris*, *C. longicollis* and *Ligula* sp. acquired in the Zoological Gardens, Halle.

R.T.L.

555—Zoologischer Anzeiger.

- a. STAMMER, H. J. & WACHEK, F., 1952.—“Ein neuer insektenparasitischer Nematode, *Carabonema hasei* n.g. n.sp. (Carabonematidae n.fam).” 148 (5/8), 185–193.
- b. ALLGÉN, C. A., 1952.—“Über einige Fälle von Viviparie bei südlichen marinen Nematoden.” 149 (5/6), 140–142.
- c. ALLGÉN, C. A., 1952.—“Über das Vorkommen von Hermaphroditismus bei zwei südlichen Arten der Gattung *Sphaerolaimus* Bastian.” 149 (7/8), 189–191.

(555a) Stammer & Wachek describe and figure *Carabonema hasei* n.g., n.sp. which was recovered from the following species of carabid beetles found in a disused sand-pit near Erlangen: *Pardileus calceatus*, *Pseudophonus griseus*, *Harpalus hirtipes*, *H. rufus* and *H. smaragdinus*. The new form is placed in Carabonematidae n.fam. which is near to Rhabdiasidae and Alloionematidae in the Rhabditida. The authors also record *Neoaplectana bibionis* from *Pardileus calceatus*.

A.E.F.

(555b) Allgén describes and sketches *Theristus longicaudatus-viviparus* n.sp. from Tierra del Fuego which he finds to be viviparous. He discusses, briefly, viviparity in other species of eelworms.

J.B.G.

(555c) Allgén reports finding intersexes in two new species of marine nematodes from South Georgia. They are *Sphaerolaimus duplex* n.sp. and *Sphaerolaimus asetosus* n.sp. A brief description and three figures of each are given.

J.B.G.

NON-PERIODICAL LITERATURE

- 556—BIESTER, H. E. & SCHWARTE, L. H. [Editors], 1952.—“Diseases of poultry.” Ames: Iowa State College Press, 3rd edit., xiii + 1245 pp., \$11.50.

In this comprehensive text-book on the diseases of poultry, the three chapters (pp. 835–941) on helminth parasites were written by E. E. Wehr. There are useful keys for the differential diagnosis of the families of nematodes, acanthocephalans, cestodes and trematodes which infect poultry and each species is described.

R.T.L.

- 557—MANSON-BAHR, P., 1952.—“Synopsis of tropical medicine.” London: Cassell & Co., Ltd., 2nd edit., xiii + 248 pp., 15/-.

- 558—STEVENS, N. E. & STEVENS, R. B., 1952.—“Disease in plants. An introduction to agricultural phytopathology.” Waltham, Mass.: Chronica Botanica Co., xx + 219 pp., \$4.75.

(558) [This text-book includes a very brief outline of the general aspects of plant nematology.]

- 559—TRACEY, M. V., 1952.—“Chitinase and cellulase of nematodes.” [Abstract.] Congrès International de Biochimie (2nd), Paris, July 21-27, 1952. Résumés des communications, p. 242.

Tracey reported that the enzymes chitinase and cellulase could not be detected in the vinegar eelworm, *Turbatrix aceti*, but that both are found in extracts of *Ditylenchus destructor* from potato and mushroom spawn. Cellulase was found in extracts of *D. dipsaci* infesting oat seedlings and this enzyme was present in greater quantity in extracts from the infested oat seedlings themselves than in extracts from healthy ones.

T.G.

- 560—UNITED STATES DEPARTMENT OF AGRICULTURE, 1952.—“Index-catalogue of medical and veterinary zoology. Part 16. Authors: T to Tsykalas.” Washington, D.C.: U.S. Government Printing Office, pp. 4987-5210.

- 561—UNITED STATES DEPARTMENT OF AGRICULTURE, 1952.—“Index-catalogue of medical and veterinary zoology. Part 17. Authors: U to Wyville.” Washington, D.C.: U.S. Government Printing Office, pp. 5211-5608.

- 562—UNITED STATES DEPARTMENT OF AGRICULTURE, 1952.—“Index-catalogue of medical and veterinary zoology. Part 18. Authors: X to Zyukov.” Washington, D.C.: U.S. Government Printing Office, pp. 5609-5711.